

II—RANDOM STUDIES AMONG THE AMERICAN CARABOIDEA

The following isolated studies and generic reviews, together with the preceding more monographic work covering the greater part of the Platyninae, nearly completes the systematic treatment of our Carabidæ which I planned many years ago. The chief delinquents in my collection now are the Clivinids and the genus *Brachinus*, and these still remain in great part unidentified or even specifically discriminated. Any efficient revision of *Brachinus* is impracticable in the absence of direct comparisons with the types, and this, because of their wide geographic dispersal, is a rather hopeless task; there is such an extreme uniformity of design among the species—of nearly the same kind as in *Galerita*—that the original descriptions must be considered in many cases quite ineffectual for purposes of identification.

I have alluded previously (Mem. Col., VII, p. 2) to the iridescence frequently observable on the elytra of the Carabidæ, and have stated that it is generally produced by a grating of very fine parallel lines, producing a spectrum. This is often very conspicuous on the elytra in the genus *Loxandrus*, the spectrum, with red at one end and blue and violet at the other, moving forward along the elytra when these are tilted at continually greater angle. Prof. A. A. Michelson having investigated the metallic coloration of insects, became interested on hearing this, and I gave him a specimen of *Loxandrus saphyrinus*. Shortly thereafter I was informed by Prof. Michelson, that he had examined the elytral sculpture of this species and had found a regular optical grating, with lines about 1000 per mm., or 25000 to the inch.

CICINDELIDÆ

On comparing the series of *Cicindela boulderensis* and *punctulata* in my collection, consisting of 25 and 27 specimens respectively, it can be seen at a glance that there are two distinct species involved; *punctulata*, occurring in abundance from Rhode Island

to Texas, is smaller and narrower than *boulderensis*, which is found in almost equal abundance in the Rocky Mountain region from Manitoba to Colorado. *Prolixa* Csy., from the flatter eastern part of Colorado, is about twice as large as *punctulata* and is very much more elongate even than in *boulderensis*. These three form a section, distinguished by constant absence of pronounced metallic coloration, and I have no doubt that *chihuahuæ* Bates (*micans*), represented before me by equally large series from Kansas, Texas, New Mexico and Colorado, is a perfectly distinct species, having not only strong metallic coloration, varying from deep purplish-blue to pale coppery-green, but with the punctures coarser on the whole and roughly burred. *Fontinaria*, very much smaller and narrower than *chihuahuæ*, is in some respects intermediate between the *chihuahuæ* and *boulderensis* types, having the smooth and almost burrless punctures of the latter and a modification of the metallic coloration of the former—more dullish coppery however throughout, but its distinctness as a species is shown by its small size and complete white humeral lunule.

There are considerable groups of species in *Cicindela* having practically identical markings, and on superficial study these are too often placed together as single species, with attached varieties or subspecies. One of these groups is that comprising *tortuosa*, *sigmoidea* and *serpens*, with a few others; *tortuosa* is of shorter and heavier build than the Pacific coast *sigmoidea*, with blacker ground color and relative deficiency of marginal pale marking; the two can of course be considered as mutually related subspecifically, but I can see no useful gain to taxonomy by this assumption; the probabilities are that they would not interbreed; but, in regard to *serpens* Lec., there can be no doubt in my opinion as to its real specific value; it is scarcely half the size of the other two, much more slender and especially with a narrower prothorax. Mr. Löding, of Mobile, was kind enough to send me very lately three examples of *Cicindela severa* Laf. On comparing the females with a female of the true *severa* in my collection, from Texas, it can be noted at once that the Alabama specimens do not conform very well and appear to constitute a subspecies as follows:

Cicindela severa ssp. *alabamæ* nov.—Female narrower and a little smaller than the female of *severa* and blacker, with scarcely a trace of

the feeble cupreous-green lustre of the latter; sculpture and ornamentation similar; elytra angulate at apex, the angle rounded at the suture and not broadly, subevenly rounded throughout as in *severa*. Length (σ^7 ♀) 12.0–13.4 mm.; width 4.33–4.65 mm. Alabama (Codon), —Löding.

The labrum is piceo-flavate as in *severa*. The dimensions of the *severa* female are 15.0 by 5.0 mm.

CARABIDÆ

Omophron Latr.

The probabilities are that this genus should be separated from the Carabidæ and placed between that family and the Dytiscidæ, but this assumption should not be based entirely upon the peculiar rotund form of the body, for the Lebiid genus *Cyclosomus* Latr., resembles *Omophron* very much in this respect. Possibly a study of the larva would be decisive in coming to a conclusion in regard to the relationships of *Omophron*. The following is a new form recently received, for which a name would seem to be desirable:

Omophron lengi n. sp.—Outline rather broadly elliptical, convex, shining, pale flavo-testaceous, the dark areas of the upper surface with green metallic lustre; head slightly more than half the basal thoracic width, the eyes large and somewhat prominent; surface with sparsely punctate green-black base, the more anterior flavate part perfectly smooth and broadly, angularly emarginating the dark basal part as in *americanum*, *texanum* and allied forms; antennæ pale, slender, rather longer than the thoracic width; mandibles blackish distally; prothorax fully two and one-half times as wide as the median length, the sides moderately converging from base to apex and feebly arcuate, the acute apical angles abruptly very prominent; punctures coarse, widely spaced and rather uneven, the surface flavate, suffusedly and broadly darker medially from base to apex, and with a transverse metallic fascia abbreviated at each side; elytra of the usual outline, slightly longer than wide, between three and four times as long as the prothorax and, near basal fourth, evidently wider, flavate, the base, dilated externally but not attaining the sides, metallic-black; suture with short angular scutellar region, a transverse oval spot at one-third, another transverse area at four-sevenths, with a hastate prolongation toward apex, green-black, a large rounded sublateral spot at basal third and a smaller one near apical fourth, connected with the post-median transverse sutural spot, also of the same color; striæ coarse, deeply impressed, fifteen in number and coarsely and deeply punctate. Length (σ^7) 6.0 mm.; width 4.0 mm. South Carolina.

The type was sent to me some years ago by Mr. Chas. W. Leng.

The species is related to *texanum* and *lacustre*, but the ground color is much paler, the dark spots being thus more clearly isolated, and the strial punctures are much coarser, closer and deeper. In coarseness and closeness of strial punctuation it is almost similar to *americanum*, but the body is much larger and the elytral spots more isolated. *Texanum* and *lacustre* are mutually closely allied, differing from *americanum* in the larger size and much broader outline and in the finer and less close-set and less coarsely punctured striae; *texanum* has the elytra somewhat the shorter, with the sides basally more strongly rounded or inflated.

The following species may be placed near *solidum*:

Omophron illustre n. sp.—Evenly elliptic, convex and shining, the dark areas above with bright green metallic lustre; head more than half as wide as the prothorax, the green basal area sparsely but distinctly punctate and deeply, angularly emarginated by the anterior smooth piceo-testaceous area; antennae slender and flavo-testaceous; prothorax more than twice as wide as long, the sides moderately converging and very evenly arcuate from base to apex; surface broadly and feebly concave along the sides, strongly punctate, less closely toward the middle of the length; metallic green, pale along the sides, extending inward a short distance at apex, without other pale areas; elytra broadly semi-elliptic, barely longer than wide, the sides very evenly arcuate and sub-continuous with those of the prothorax; green metallic area very large and almost unbroken, the narrow pale margins prolonged inward in a broad and very irregular fascia near the base to the second stria, and, obliquely and broadly extending inward at apex; otherwise the large green area has only about two very small detached external spots; striae 15 in number, not coarse or much impressed, the punctures relatively small and widely separated. Length (♀) 6.3 mm.; width 3.8 mm. Utah (Vineyard),—Spalding.

This very distinct species may be placed near *solidum*, but it differs greatly in its less broadly and still more evenly elliptic outline, in the finer elytral striae, with much smaller, widely separated punctures, and the brighter green lustre of the dark dorsal areas.

Elaphrus Fabr.

Among the small and densely punctate species of this genus there seems to be some confusion; *punctatissimus* and *sinuatus* of LeConte and *intermedius* Kirby, are the same as *ruscarius* Say; *gratiosus* Mann. from Kenai, Alaska, having the ocellate elytral foveae violaceous, is evidently a distinct variety or is perhaps specifically

valid; *similis* Lec., from the vicinity of Long's Peak, is also a subspecies of *ruscarius* and not a synonym. The species described by Mannerheim as *californicus*, which has been omitted from our lists, but usually considered the same as *riparius* L., is a perfectly valid species, allied to *riparius*, and as I see from a European specimen of the latter at hand, is of similar outline and nearly similar sculpture, but in *riparius* the epipleura of the elytra are gradually narrowed from base to about the middle, with even internal outline, while in *californicus*, of which I have a considerable series from Lake Co., California to Washington State, the epipleura are obtusely angulate within near basal third, thence more rapidly narrowing behind. Besides this rather radical difference, the prothorax in *californicus* is scarcely as wide as the head, not wider than long, more strongly, loosely and irregularly punctured than in *riparius* and with deeper impression and consequently more irregular surface, the sublateral foveæ being especially distinct; in *riparius* the prothorax is wider than long and with comparatively even, finely and densely punctured surface, and is about equal in width to the head.

The following species is a little larger and relatively much broader than *californicus*:

Elaphrus finitimus n. sp.—Moderately convex, ventricose, obscurely cupreous, the under surface bright green; legs obscure, the tarsi, base and apex of the tibiæ and most of the femora green, the posterior femora testaceous in nearly basal half, the others pale only at base; head scarcely as wide as the prothorax, with the usual prominent eyes, the surface densely punctulate, the sculpture centrally feebly, unevenly, longitudinally strigilate; antennæ short, black, with greenish lustre basally; prothorax evidently wider than long, relatively larger than in *californicus*, constricted basally, the sides prominently rounded; base as wide as the apex; surface finely, closely punctate throughout, the sublateral median pit distinct; median furrow short, deep, broadly bifurcate anteriorly; elytra closely punctulate, a third longer than wide, a little less than twice as wide as the prothorax, the obtuse humeral angle rounded, the sinus between basal third and fourth short and feeble, widest behind the middle, obtusely ogival behind; foveolæ large, well impressed, densely punctate, green, the central elevation large, feeble and obscure, the foveolæ in four series as usual and connected axially in some cases by more shining elevations, of which one near the suture and basal third is very large, smooth and polished; under surface densely punctate, the abdomen smooth except laterally. Length (♀) 7.0 mm.; width 3.3 mm. California.

The inner margin of the epipleura is angulate as in *californicus*. The general character of the sculpture much more closely resembles that of *californicus* than *riparius*, where the pronotal surface is much more even, and the small darker convexity at the centre of the elytral foveolæ much smaller; there is no trace of the strigilate patch at the centre of the front in *riparius* and barely any trace of it in *californicus*.

The following species also belongs to this *riparius* section of the genus, but differs greatly in its relatively broader form and sharply angulate humeri:

Elaphrus hesperius n. sp.—Form more abbreviated than in *riparius*, *californicus* or *finitimus*, with especially shorter hind body, paler and subcupreous-brown in color, dull in lustre, the few elevations of the elytra, which are disposed as in the preceding, polished black; foveolæ large, rather shallow, annulate and greenish, with the central umbo very large, feebly convex and more obscure in color; entire upper surface finely and very densely punctured; under surface greenish-æneous, less finely and less densely punctured than the upper surface, the abdomen smooth medially; legs as in the preceding; head as in *finitimus*, except that the central feeble convexity never has more than a trace of strigilation; antennæ rather short and thick, the three smooth basal joints feebly metallic; prothorax a fifth wider than long—sometimes fully a fourth, the general outline as in *finitimus*, the surface more densely punctate, less uneven, the sublateral pit being wholly obsolete, and having about three small rounded areas at each side, in which the color is dull steel-blue; median line tumid at apex and base, striate at the middle, the divaricate impression obtuse; elytra but little over a fourth longer than wide, widest, slightly inflated and not quite twice as wide as the prothorax at about the middle, gradually but very obtusely rounded behind; humeral angles very obtuse but sharply defined, the sinus near basal fourth deep, rounded and conspicuous. Length (♂ ♀) 6.2–7.0 mm.; width 3.15–3.4 mm. California (Humboldt to S. L. Obispo Co.). Eleven specimens.

I believe that both sexes are represented in the series at hand, but scarcely any sexual differences in structure are visible, the anterior tarsi of the male are a little shorter than in the female but only just visibly less slender. In the eastern *ruscarius* Say, which belongs to this section of the genus, the prothorax is distinctly narrower than the head, and the irregularities of the elytral surface are more effaced, the sinus behind the humeri distinct and the humeral angles rounded; the tibiæ are paler in color; *lecontei* Cr. (*intermedius* || Lec.), from Utah, also belongs to this section of the

genus but is larger, with more transverse prothorax and relatively small head.

The following species is allied rather closely to *lecontei*:

Elaphrus devinctus n. sp.—Feebly convex, with rather broad hind body; color obscure bronze above, cupreous beneath, metallic green along the median parts and the entire abdomen; legs as in *lecontei*; head distinctly narrower than the prothorax, finely, densely punctate, minutely rugulose between the eyes; antennæ short and thick, nearly as in *lecontei*; prothorax shorter, fully a third wider than long, the prominently rounded sides becoming abruptly parallel in basal fifth; surface finely, very densely punctate, feebly and transversely biimpressed toward the sides, the fine median stria greatly biabbreviated; elytra a third longer than wide, four-fifths wider than the prothorax, gradually broadly rounded behind, the parallel and broadly arcuate sides with a small distinct sinus just behind basal fourth; surface finely, very densely punctate, the large foveæ of the four series very distinctly defined; central umbones minute but evident, each surrounded by a more obscure dark ring, the foveæ separated longitudinally by small and somewhat elevated polished spots, the one at the suture just before the middle much the largest and oblong; tarsi slender, bright metallic green. Length (♀) 7.5 mm.; width 3.5 mm. Colorado (Wray),—Shantz.

Distinguishable readily from *lecontei* by its more abbreviated form, shorter parallel part of the prothorax at base, this in *lecontei* being about a fourth the entire length, and by the more impressed and more sharply defined elytral foveæ.

Notiophilus Dum.

This genus was reviewed at some length by Mr. H. C. Fall some years ago, so that at present it is only desirable to add several recently discovered new forms, and to offer a few mildly critical remarks. I am unable to understand, for instance, why Mr. Fall did not place *novemstriatus* Lec., as one of the 7-striate series. This is one of our smallest species, of notably slender form and wide distribution, represented in my collection from Massachusetts to Colorado. The striation between the frontal grooves is somewhat inconstant and apt to become irregular, but there are many more specimens having seven striæ than those with five or six, thus warranting the name given by LeConte, who counted the two coarse grooves in with the intermediate striæ; LeConte noticed five striæ between the grooves in some examples, which he referred to the much larger *semistriatus*.

It is probable that *punctatus* Lec., is a valid species, unknown to me at present; it is from the Lake Superior region, and the author states that there is but one scutellar stria or series and that the sutural stria is not recurved and exarate at tip, which would differentiate it very clearly from any of the related species, if these singular characters are constant; it might be accorded specific standing, until something more definite can be learned concerning it.

Mr. Fall has suppressed *hardyi* Putz., as a synonym of *aquaticus* Linn. Without actually knowing the Linnean species, I am inclined to think that this course may prove to be erroneous for two reasons. In the first place, I have found in numerous instances in which American have been declared the same as European species, that such identification was false and due entirely to hasty and superficial observation, and, without venturing any more definite conclusion in the present instance, it becomes, with me at least, a source of grave uncertainty. This is accentuated by the second reason, which rests upon the fact that Putzeys, an able and enthusiastic student of the Carabidæ, who was perfectly familiar with *aquaticus*, described *hardyi* as a distinct species. I have a single example, which I refer to this species, from Marquette, Michigan; it is rather slender, somewhat resembling *novemstriatus* in habitus, but with relatively narrower second stria interval, more separated striæ and with the striæ obsolete for a long distance before the apex; the outer two or three striæ are obsolete except basally; the sides of the prothorax are sinuate and parallel at base.

The two following species are allied to *simulator* Fall:

Notiophilus sierranus n. sp.—Slender, polished throughout and black, with æneous lustre, which is wanting beneath; legs black, the tibiæ rufescent; head scarcely at all wider than the prothorax; front with five medial striæ; antennæ black, the four basal joints testaceous; prothorax four-fifths wider than long, widest and with rounded sides near apical third, the sides moderately oblique and straight thence to the base, just visibly and broadly sinuate toward the angles; surface smooth, with short and deeply impressed median stria, rather closely punctate peripherally, the basal foveæ rounded, rather deep and coarsely, densely punctate; elytra four-fifths longer than wide, evidently wider than the prothorax, parallel, with broadly and subevenly arcuate sides; striæ scarcely at all impressed, with rather strong and well spaced punctures, which become very gradually finer behind and are traceable almost to the apex: seventh only distinct basally, exarate at apex; first stria composed of very fine punctures; second interval not as wide as three

to five combined; dorsal fovea single, only moderate in size and at three-sevenths; two apical foveoles rather widely spaced. Length 4.4 mm.; width 1.45 mm. California (Lake Tahoe). A single example, taken by the writer.

Distinguishable from *evanescens* Csy., by the elytral punctures only slightly and very gradually smaller from base to apex; in the latter species the punctures become rather coarse and strong rapidly in about basal third or slightly more, and the coarser and more perforate dorsal fovea is at two-sevenths; the apical foveoles are smaller and feebler.

Notiophilus coloradensis n. sp.—Form and size nearly as in the preceding, polished and black throughout, the upper surface obscure æneo-cupreous; legs black, the tibiæ feebly rufescent; head slightly wider than the prothorax, with the usual very large and prominent eyes; frontal intermediate striæ five, long, deep and very regular; antennæ blackish, with silvery hairs, the first four joints pale; prothorax three-fourths wider than long, widest near apical third, with evenly rounded sides, becoming gradually less arcuate and only moderately converging behind and deeply sinuate and then parallel at base, the angles very sharp and even somewhat prominent laterally; surface nearly as in the preceding, except that the basal foveæ are short and deeply linear; there is also a small feeble impression in prolongation thereof near the middle; median prolongation of the apex longer and less obtuse than in *sierranus* or *evanescens*; elytra oblong-oval, convex, three-fourths longer than wide, distinctly wider than the prothorax, the parallel sides evenly arcuate; striæ evidently impressed, rather coarse, coarsely, deeply and closely punctate, the punctures gradually becoming fine and more distant posteriorly, disappearing near the apex; punctures of the eighth stria becoming subobsolete only for a short distance before the exarate apical part; second interspace equal in width to three and four combined; two apical foveoles very small, rather indistinct; dorsal fovea large, deep, barely at all before the middle, that of the right elytron wanting in the type. Length 4.35 mm.; width 1.4 mm. Colorado (Boulder Co.),—Mrs. T. L. Casey.

Also allied to *evanescens* and *simulator* but distinguished by the deeply sinuate sides of the prothorax at base, coarse strial punctures and submedial position of the dorsal fovea. I overlooked the type of this species in describing *evanescens*; it is a very different thing.

As the existence of several distinct species of the *simulator* type is thus proved conclusively, I now doubt that *evanescens* is really the same as *simulator*, as announced by me some time ago, the type locality of the latter being assumably Mullan, Montana; *evanescens*—4.2–4.5 mm., is a little smaller than *simulator*—4.4–4.65

mm., which is very inadequately described and only by comparison with an assumed *aquaticus*, which, as stated above, in its typical form probably does not occur in America. So until further evidence is forthcoming, *evanescens* should be restored to the list.

The following species is rather closely allied to *novemstriatus*, but is broader and less parallel:

Notiophilus directus n. sp.—Oblong, moderately convex, polished, bright bronze in lustre; head equal in width to the prothorax, the eyes very large; front with seven striæ between the coarse sulci; antennæ with the four basal joints paler, slender; prothorax two-thirds wider than long, widest and rounded at the sides for a very short distance at apex, thence converging and straight, becoming gradually and barely visibly sinuate at base; surface strongly and densely punctate peripherally, the basal foveæ well developed and deeply impressed; stria deeply impressed, slightly biabbreviated; apical cusp moderate; elytra two-thirds longer than wide, evidently wider than the prothorax, obtusely ogival at apex; sides parallel and nearly straight, rather rapidly arcuate at base; striæ laterally close-set and coarsely, deeply and closely punctate not quite to the apex, the oblique apical carina well developed; second interspace almost as wide as the distance thence to the sides viewed vertically, the third and fourth intervals a little wider than the others external thereto; dorsal fovea coarse, single and at two-sevenths, the anterior of the two apical foveoles coarse. Length 4.3–4.7 mm.; width 1.4–1.6 mm. Indiana and Iowa (Keokuk).

Differs from *novemstriatus* not only in its shorter and broader outline, giving it a distinctly different habitus, but in the somewhat larger eyes, more strongly rounded thoracic sides at the extreme apex, coarser anterior of the two apical foveoles of the elytra and in some other characters.

The following is the smallest species known from the American fauna:

Notiophilus parvus n. sp.—Form somewhat narrow, highly polished throughout, deep greenish-black, the tibiæ dark piceous; head slightly wider than the prothorax, the eyes separated anteriorly by somewhat less than their own length; medial frontal striæ rather fine, deep, seven in number; antennæ dark, paler basally; prothorax four-fifths wider than long, the sides subparallel, broadly, evenly arcuate, becoming gradually oblique and broadly, feebly sinuate in about basal half; base sinuate except at the sides; apical prominence broadly angulate; surface rather coarsely, deeply and closely punctured peripherally, the stria rather fine, impressed, biabbreviated as usual; foveæ large, broadly concave, extending from base to rather beyond the middle; elytra not quite twice as long as wide, wider than the prothorax, gradually narrowed at apex, the sides broadly arcuate; striæ feebly impressed, rather coarse, close-

set, coarsely, deeply, moderately closely punctate, the punctures gradually smaller and then obsolete posteriorly, the eighth as in *coloradensis*; second interspace about as wide as the next three combined, the apical foveoles two in number; dorsal fovea single, coarsely impressed, at three-sevenths. Length 3.35 mm.; width 1.2 mm. New York (Catskill Mts.), —H. H. Smith.

According to the classification of Mr. Fall, this species would come near *obscurus* Fall, of the California Sierras, but it is as much below the average in point of size as that is above it. Embodying the opinions expressed above I am disposed to suggest the following list of the North American species of this genus:

<i>aneus</i> Hbst.	<i>coloradensis</i> Csy.
<i>semistriatus</i> Say	<i>nemoralis</i> Fall
<i>americanus</i> Harris	<i>sylvaticus</i> Esch.
<i>confusus</i> Lec.	<i>novemstriatus</i> Lec.
<i>punctatus</i> Lec.	<i>quadrifoveatus</i> Harr. i. litt.
<i>hardyi</i> Putz.	<i>directus</i> Csy.
<i>borealis</i> Harris	<i>parvus</i> Csy.
<i>simulator</i> Fall	<i>obscurus</i> Fall
<i>evanescens</i> Csy.	<i>nitens</i> Lec.
<i>sierranus</i> Csy.	<i>semiopacus</i> Esch.

According to the principle recently adopted by Mr. Leng, of renaming species bearing names which have been previously given in the genus, whether or not these older names are synonyms, *obscurus* Fall, of the above list, would have to receive another designation; for, as I see by the European list, there is an *obscurus* D'Torre, which is a synonym of *aquaticus*. I believe this principle to be unnecessary, however, and if generally adopted would give rise to almost endless giving of new names throughout the field of zoology.

Trachypachus Mots.

Trachypachys G. & H.

The species of this genus are strikingly inharmonious, in general habitus, with the other genera in this part of the Carabidæ, reminding us much more of certain forms of *Bembidion*, such as *obliquulum* or *erasum*, than they do of *Elaphrus*, *Loricera* and other associates of this section. As a genus *Trachypachus* is peculiar, in that the hind coxæ attain the sides of the body. My collection includes five species as follows:

Prothorax not materially wider at the middle than at base; size larger... 2
 Prothorax distinctly wider at the middle than at base, generally more abbreviated; size smaller; antennæ relatively more elongate... 3

2—Form oblong-suboval, convex, strongly shining and bright cupreo-æoneous above, slightly picescent and not metallic beneath, the legs dark rufous; head shorter than wide, scarcely three-fifths as wide as the prothorax, the eyes moderate in size and prominence, the surface evenly convex, smooth, the epistomal suture deeply sinuate; palpi and antennæ piceo-rufous, the latter a third longer than the thoracic width, shining, with short sparse hairs; prothorax three-fifths wider than long, the sides finely reflexed or beaded, parallel and just visibly sinuate in less than basal half, feebly arcuate and converging thence to the small and bluntly prominent apical angles, the basal right and well defined; base transverse, wider than the broadly sinuate apex; surface smooth, with a moderate and slightly punctulate transverse impression near the base, merging into the broadly concave punctate foveæ, which are bounded externally by a strong oblique carina; scutellum well developed, transversely and obtusely ogival; elytra very little wider than the prothorax, with feebly arcuate sides, gradually ogivally narrowing in somewhat less than apical half; striæ unimpressed, visible only internally and consisting of series of moderate and well separated punctures, becoming very fine externally, the scutellar series long, extending between the suture and the first regular series; apex obliquely impressed, the impression bounded externally by a cariniform elevation; under surface and rather short legs smooth, glabrous, the legs with a few short bristles. Length 5.7–5.8 mm.; width 2.5 mm. California (Siskiyou Co.),—Koebele. East of Fort Colville [about 300 miles to the northeast of Siskiyou Co.],—LeConte... *gibbsi* Lec.

Form narrower, nearly similar in coloration and lustre, the antennæ and palpi black but otherwise nearly similar, the latter rather more slender; head as in *gibbsi*, the prothorax distinctly shorter and more transverse, fully three-fourths wider than long, the sides basally straight and very slightly converging posteriad, the base more visibly narrower than the maximum width; general form similar, the apical angles rather less prominent; transverse sub-basal impression subobsolete, the foveæ broadly concave, less punctate and more distinctly duplex, the bounding oblique prominent line subsimilar; side margins similarly with three setæ, one at each angle and the third near apical third; scutellum still broader, being a third as wide as an elytron, the elytra one-half longer than wide, not evidently wider than the prothorax; apex less acutely pointed than in *gibbsi*, the other characters nearly similar. Male with the first two joints of the anterior tarsi very moderately dilated, the second the smaller and as long as wide. Length 4.8–5.0 mm.; width 2.0–2.12 mm. California (Lake Tahoe). Two examples, taken by the writer..... *alticola* n. sp.

3—Prothorax less abbreviated, scarcely two-thirds wider than long, the punctured transverse subbasal impression feeble, completely interrupted at the middle. Body oblong, convex, polished and bright

cupreo-æneous; under surface and legs as in the preceding species; head almost similar; antennæ piceous-black, shining, longer, evidently more than half as long as the body, the third joint longer than the fourth as usual; sides of the prothorax finely reflexed or beaded, moderately oblique and feebly sinuate in less than basal half, faintly diaphanous throughout; surface very smooth, the anterior transverse impression traceable; foveæ smaller, narrower, deeper and smoother than in the two preceding, the outer oblique bounding carina strong and relatively somewhat longer; apex evenly sinuate, narrower than the base, almost as wide as the base in the male; scutellum less transverse, triangular, only a little wider than long; elytra two-fifths longer than wide and evidently wider than the prothorax, with the parallel sides broadly rounding basally, more rapidly ogival in about posterior third; apical impressions almost obsolete, the carina faint; punctures of the unimpressed series visible toward the suture moderate; anterior male tarsi only very feebly dilated basally. Length 4.25-4.65 mm.; width 1.7-1.8 mm. Oregon. Two examples. *oregonus* n. sp.

Prothorax shorter, three-fourths wider than long, the punctured sub-basal groove sharper and deeper, not medially interrupted. Body more oblong-parallel and less convex, polished, the upper surface greenish anteriorly, more cupreous on the elytra, the under surface and legs concolorous and piceo-rufous; head narrower, the eyes similarly only feebly convex but rather smaller in size; antennæ shining, black, more than half as long as the body, the third and fourth joints more unequal than in *oregonus*; prothorax in general features as in *oregonus* but with the apical angles blunter, the basal foveæ not so deep and more punctate and the carina less oblique; elytra more elongate, one-half longer than wide, otherwise nearly as in *oregonus*, the apical impression obsolete, the cariniform elevation feeble; scutellum shorter but not wider. Length 4.6 mm.; width 1.85 mm. British Columbia (Aldermere),—Keen. [*T. holmbergi* Mann., Kenai, Alaska]. *inermis* Mots.

Prothorax still shorter, four-fifths wider than long, the subbasal impressed line rather deep and punctured but somewhat widely interrupted at the middle. Body smaller and narrower than in *inermis*, highly polished, black, with feeble greenish lustre above; under surface black, the legs dark rufous; head smooth and convex, only slightly shorter than wide, the eyes not larger but more prominent than in *inermis*; antennæ similar; prothorax very smooth, the medially arcuate and finely reflexed side margins feebly diaphanous; median stria extremely fine and feeble as usual; foveæ rather small, deep, punctured, the carina rather oblique, well developed; apex but little narrower than the base in either sex; scutellum short and transverse, moderate in size; elytra less than one-half longer than wide, distinctly wider than the prothorax, the parallel sides but feebly arcuate, rounding basally, rather rapidly ogival in apical third; apical impression and attendant prominent line feebly developed; punctures of the unimpressed series toward the suture

very fine and rather well separated; tarsi slender, the first two joints of the anterior very feebly dilated in the male; sides of the metasternum with a few moderate punctures. Length 3.8-4.3 mm.; width 1.6-1.75 mm. California (Lake Tahoe). Three examples taken by the writer, with which are united a series of seven specimens from Colorado, Idaho (Cœur d'Alene) and Oregon, scarcely differing among themselves and varying chiefly in the distinctness and continuity of the transverse subbasal pronotal sulcus.

specularis n. sp.

This genus differs from all the others in this part of the Carabidæ, excepting *Omophron*, in having no trace whatever of dorsal elytral foveæ; this is rather remarkable if *Trachypachus* be really closely related, in view of the exceptional development of these foveæ in such genera as *Blethisa*, *Loricera* and *Pelophila*, and may indicate that it is more closely allied to *Diachila*, where however three foveæ on each elytron are sufficiently evident, though very shallow and diffuse. There can be no doubt, however, that *Trachypachus* is one of the most widely and completely isolated of Carabid genera. The genus *Systolosoma* Sol., of Chile, said to belong to the same subfamily, I have not seen.

Loricera Latr.

This is another remarkably distinct genus, having however a more normal outline for the first division of the Carabidæ, and with the hind coxæ abbreviated externally as usual, but having peculiar antennæ, the basal joint being long and the next three thicker than the following joints, with tumid elevations, each bearing a long stiff seta. As generally observable in this section of the family, the large dorsal punctures of the elytra are variable and, although assumed by Horn as the basis of his classification of the species, it may be noted that in *californicus*, although there is but a single series of foveæ in most cases, as stated by that author, two of the eight examples in my collection have two instead of one series on each elytron. In *neoscotica* Lec., which I prefer to hold as distinct from *cærulescens* Linn., my four examples from Lake Superior, Maine and Labrador, show no tendency to duplication of the series of foveæ; these specimens are all of an obscure subæneous lustre, without trace of cærulescence. The following is an apparently new form near *neoscotica*:

Loricera uteana n. sp.—Shining, black, the anterior parts with feeble greenish lustre, the elytra not evidently metallic; under surface deep black; legs piceous-black, the tibiae and tarsi paler, the anterior and middle trochanters bright testaceous as usual; head more than three-fourths as wide as the prothorax, transverse, the eyes large and prominent, the nuchal constriction deep and sharp; surface rugulose laterally, the two anterior pits and occipital median line deeply impressed; mandibles pale; antennae black, half as long as the body, the basal joint testaceous at base; prothorax only between a fourth and fifth wider than long, the moderately reflexed sides broadly, evenly arcuate, more oblique only near the base, becoming just visibly sinuate at the angles, which are more than right though very sharp; surface smooth, sparsely punctured at base, the median line broadly impressed; anterior impression wholly wanting, the posterior evident though not deep; foveae broadly concave, extending sinuously forward in sharply and deeply impressed form through basal two-fifths of the length; apex very faintly sinuato-truncate and strongly beaded along the neck, the outer angles very broadly rounded, undefined; elytra oblong, with parallel and feebly arcuate sides, more rounding basally, one-half longer than wide and one-half wider than the prothorax, oblique and very obtusely ogival at apex; striae twelve in number, impressed suturally, moderately punctate, the punctures obsolescent posteriorly; lateral striae very fine, the twelfth deep, the marginal interval with an irregular series of moderate punctures, the third interval with three large and broadly impressed foveae; abdomen latero-basally, sides of the metasternum and the metepisterna coarsely punctate. Length 7.3 mm.; width 2.9 mm. Utah (Provo),—Spalding.

Differs from *neoscotica* in its bipartite and more obscure lustre, less elongate form of body, narrower and basally less narrowed prothorax and more elongate basal joint of the antennae. From *californica* Lec., it differs in its larger size and broader outline, much less transverse prothorax, not so sinuate at the sides basally, larger head, less intensely black coloration and in many other features.

Besides the twelve elytral striae, this genus is peculiar in having no trace of a scutellar stria, but the second stria fails to attain the base and apparently ends in a somewhat larger puncture; the elytra have each a feeble apical indentation. The male has the first three anterior tarsal joints rather widely dilated, densely spongy-pubescent beneath and forming an elongate-oval patellum. The tarsi are long and very slender.

Leistus Fröh.

Dr. G. H. Horn, in his monograph on the tribes and genera of the Carabidae, forms a tribal group Nebriini, to which he assigns, in

addition to the evidently Nebriid genera *Pelophila* and *Leistus*, as well as *Nebria*, the genera *Opisthius* Kirby and *Notiophilus* Dum. In my opinion *Notiophilus* should form a group by itself, the subapically emarginate anterior tibiæ, as well as the general habitus of the body, being radically different from that of the associated genera, and *Opisthius* might much better be placed with *Elaphrus*, as a member of the Elaphrini, in spite of the fact that the anterior tibiæ of *Elaphrus* are emarginate internally near tip, while in *Opisthius* they are simple and merely coarsely grooved beneath apically as in *Leistus*, *Nebria* and *Pelophila*. The general habitus and peculiar scheme of sculpture in *Elaphrus* and *Opisthius** are identical, and these general features outweigh modifications of special organs or appendages. The following is a hitherto undescribed species of *Leistus*, recently discovered in northern California by Mr. Nunenmacher:

Leistus longipennis n. sp.—Body very narrow, elongate and subparallel, with relatively large head and prothorax, shining, evenly somewhat dark rufous in color throughout, the legs concolorous; head as long as wide, more than three-fourths as wide as the prothorax, with moderately large and very prominent eyes; transverse nuchal depression deep; surface smooth, with some close fine strigilation near the anterior angles; mandibles broadly inflated externally, the very wide external depression with a small setigerous puncture anteriorly, the apices abruptly narrowed and finely aciculate; antennæ long, fully half as long as the body and extremely slender, pale, the first four joints glabrous, the fourth only two-thirds as long as the third joint and three-fifths as long as the fifth; prothorax strongly inflated, one-half wider than long, widest at the middle, at which point the margin is somewhat more widely reflexed than anteriorly or posteriorly; sides subevenly and strongly rounded, becoming abruptly parallel for a short distance at base, the angles sharp and right; base transverse, four-sevenths the maximum width and equal in width to the apex, which is bisinuate; surface convex and very smooth, the anterior transverse impression very broad, deep and sparsely punctate, the posterior deep, narrower and broadly angulate, the surface sparsely punctate thence to the base;

* The species *Opisthius indicus*, of Chaudoir, evidently represents a genus different from the subarctic American *Opisthius*, which may take the name *Paropisthius* (n. gen.), if not already named. The body is less ventricose, nearly as in *Elaphrus*, but with the sides of the prothorax very prominently lobed; the maxillary palpi are truncate and not bluntly pointed at tip, the epistomal suture transverse and not sinuate, and the large elytral foveæ are not finely umbonate at the centre as in *Elaphrus* and *Opisthius*, but have perfectly flat floors, with a minute central puncture and also with about four fine longitudinal striiform series of minute punctures. The femora and tibiæ are pubescent in *Opisthius* and glabrous in *Paropisthius*.

scutellum distinct, obtusely ogival; elytra about twice as long as wide, gradually inflated behind, with nearly straight sides, broadly rounding at base, widest near apical third, barely a third wider than the prothorax, gradually evenly rounded at apex; striae nine in number, rather coarse, deeply impressed and distinctly punctured, and, except the sutural, obsolete at apex; intervals broadly convex, the third with three impressed punctures adjoining the third stria; scutellar stria long, the second regular stria deflexed basally to the subscutellar puncture; sides of the metasternum and first ventral, also the met-episterna coarsely punctate; first three joints of the anterior male tarsi moderately inflated, convex above, spongy-pubescent beneath; legs long and slender. Length (σ) 9.8 mm.; width 3.25 mm. California (Humboldt Co.). A single example.

Distinguishable at once from *ferruginosus* and *nigropiceus* by the much larger size, more elongate form and relatively very much larger prothorax, also from the former by the posteriorly inflated elytra, equally distinct in *nigropiceus*, and from the latter by the relatively smaller head, in which it accords better with *ferruginosus*. As in the other species of this very isolated genus, as well as *Nebria* and *Pelophila*, there is but one supra-orbital seta and the anterior tibiae are briefly and very deeply sulcate beneath at apex. Dr. Horn does not seem to allude to the long thread-like antennae, with the fourth joint very much shorter than the third or fifth; this proportion of the joints is feebly evident in the very much shorter and stouter antennae of *Nebria* and *Pelophila*, proving also in this way, that these three genera form a natural group.

Nebria Latr.

A considerable number of new forms in this genus have come to light recently, and I am now convinced that a series from Labrador, which I formerly held to represent *sahlbergi* Fisch., does not have this status but is doubtless an undescribed species. The numerous species of the European fauna, where also *Leistus* is greatly developed, when compared with North America, are divided into a number of named subgenera; our own species do not lend themselves so readily to this form of subdivision, the only ones known to me at present which might be assigned to a separate subgenus being *virescens* Horn, with the allied *brevis* Csy., and the *ingens* section; the habitus of these species is notably different from that characterizing the many other species; perhaps *pallipes* and allied species might form another subgenus.

The following species has the sides of the prothorax merely oblique behind and not distinctly sinuate basally; being the only one of the *obliqua* series at hand, it is described before the others:

Nebria nimbose n. sp.—Rather narrow and very moderately convex, shining, black above and beneath, without trace of metallic lustre; legs long and very slender, dark rufous, the femora blackish, gradually rufescent basally; head as long as wide, fully three-fourths as wide as the prothorax, the eyes moderate, rather prominent; front smooth, with two red spots on a line through the middle of the eyes; anterior margin tumid at the middle; mandibles and palpi piceo-rufous, the last joint of the latter two-thirds longer than the third; antennæ slender, nearly three-fifths as long as the body, black, gradually brown distally; prothorax not quite one-half wider than long, widest at the middle, the sides arcuate, oblique and broadly, just visibly sinuate basally, broadly and strongly reflexed throughout; basal angles obtuse though sharply defined, the apical prominent but rounded; base transverse, distinctly narrower than the broadly, deeply sinuate apex; transverse impressions both rather sharp and deep, the base depressed, feebly and sparsely punctulate; foveæ very small, basal and linear; elytra four-fifths longer than wide, two-thirds wider than the prothorax, gradually slightly wider behind, with nearly straight sides, which are rapidly rounded at base; apex rather rapidly rounded, each apex oblique and straight, rounded suturally; striæ rather coarse, feebly impressed, with distinct and well separated punctures, the third with about three small feeble setigerous punctures; intervals not quite flat; scutellar stria long. Length 9.4 mm.; width 3.6 mm. New Hampshire (Lake of the Clouds, Mt. Washington). A single female.

Allied to *longula* Lec., occurring in Colorado; the sides of the elytra are not parallel as they are in *suturalis*, described by LeConte from Lake Superior, but said to occur also in New Hampshire; the size is smaller and the color more uniformly black.

The following species are all devoid of any metallic lustre; the first three are allied to the Alaskan *sahlbergi*:

Nebria reducta n. sp.—Body of unusually small size, shining, black, the elytra and under surface more or less feebly picescent, very moderately convex; legs slender, obscure rufous, the femora blackish; head triangular, as long as wide, two-thirds as wide as the prothorax, the eyes moderate, rather prominent; surface without red spots, nearly smooth, feebly tumid at apex, the epistoma canaliculate in apical half; palpi long, testaceous, the last joint blackish and two-thirds longer than the third; antennæ piceo-rufous throughout, fully half as long as the body; prothorax short, very nearly twice as wide as long; sides strongly rounded, oblique in basal half, becoming parallel basally, the angles right, very sharp; margins deplanate, uniserially punctate, the edge sharply reflexed and pallescent; transverse impressions deep, punctate:

foveæ rather large, oblique and deep; median stria well impressed, rather coarse; elytra two-thirds longer than wide, only a fourth wider than the prothorax, oblong, only just visibly wider behind, the sides rapidly rounded at base; apical obliquity just visibly sinuate; striæ rather fine, feebly impressed and with small and well separated punctures, the third with four small foveæ within large irregular indentations; intervals nearly flat; anterior male tarsi with the first three joints large, dilated and densely albido-spongy-pubescent beneath. Length 7.7-8.4 mm.; width 3.1-3.3 mm. Alaska (St. Paul Island). Seven specimens.

Allied to *sahlbergi* but smaller and with still shorter and more transverse prothorax. I cannot be sure, however, that the single specimen at hand representing *sahlbergi*, also from St. Paul Island, is really that species.

Nebria labradorica n. sp.—Much larger than the preceding and rather more convex but of nearly similar habitus, piceous in color, moderately convex, shining; legs colored nearly as in the preceding; male more abbreviated than the female; head nearly as in the preceding, the last palpal joint only one-half longer than the third; prothorax three-fourths (♂) to three-fifths (♀) wider than long, widest just visibly before the middle, the sides evenly arcuate, oblique and gradually sinuate behind, becoming parallel at the angles, the sinus much less abruptly formed than in the preceding, the angles right, sharp; margins nearly similar but more widely and constantly rufescent; transverse impressions deep, strongly punctured, the median stria deeply impressed, almost entire; foveæ deep, slightly oblique; elytra broader, oblong, parallel, three-fourths longer than wide, a fifth (♂) to more than a fourth (♀) wider than the prothorax, the sides gradually rounded basally, the apical obliquity scarcely more than straight; striæ moderate, feebly punctate, the third with four internally adhering punctures, not within large impressions; intervals broadly convex, flatter externally; three basal joints of the anterior male tarsi well dilated, the second and third quadrate. Length 8.7-9.8 mm.; width 3.2-3.5 mm. Labrador (West St. Modest),—Sherman. Nine specimens.

Distinguishable readily from the preceding by its larger size, broader form, less abbreviated prothorax, more parallel elytra and absence of large indentations about the dorsal foveæ. Its exact relationship with *sahlbergi* cannot be stated definitely at present.

Nebria prominens n. sp.—Rather slender, more convex, shining and deep black above and beneath; legs long and slender, obscure rufous, the femora black; head triangular, three-fourths as wide as the prothorax, with prominent eyes; maxillary palpi rufous, the fourth joint one-half longer than the third; front without pale spots; antennæ piceous, more than half as long as the body; prothorax one-half wider than long, widest just before the middle, the sides evenly rounded, gradually oblique, becoming subparallel behind the middle, the angles

very acute and laterally subprominent; apical angles well defined though slightly blunt at tip; impressions and reflexed side margins punctate, the anterior impression shallow, the posterior very deep; foveæ very deep, oblique; elytra four-fifths longer than wide, a third wider than the prothorax, gradually just visibly wider behind, the sides feebly arcuate, very rapidly rounding at base; apices very oblique, almost straight, rounded as usual at the suture; striae moderately coarse, with fine and widely spaced punctures; intervals nearly flat, the third with four punctures, which are confluent with the third stria; tarsi very long and slender. Length 9.2-9.7 mm.; width 3.65-3.75 mm. New Hampshire (Mt. Washington). Two female examples.

Differs much from *labradorica* in its narrower form, less abbreviated and laterally less strongly rounded prothorax, with more prominent acute basal angles, narrower and posteriorly somewhat inflated elytra, intense black coloration and almost non-diaphanous thoracic sides; the sides of the elytra are more rapidly and strongly rounded at base. It is probably allied rather closely to *mæsta* Lec., from Lake Superior, but is apparently more convex.

The two following species are allied to the west coast *eschsoltzi*, having entirely very pale legs:

***Nebria transversa* n. sp.**—Stout, the outline much broader than in *eschsoltzi*, the surface fully as convex, shining, the anterior parts and under surface rufo-piceous, the elytra black; legs very pale, long and slender; head large, less triangular than in the preceding section, barely as long as wide, the prominent and well developed eyes at a greater distance from the base; surface nearly smooth, with two nubilously paler spots on a line through the eyes; mandibles rufous, the inner margin black; palpi clear rufous throughout, the last joint very obtuse at apex, one-half longer than the third; antennæ missing in the type, the basal joint pale testaceous; prothorax short and very broad, fully three-fourths wider than long, widest at anterior two-fifths, the inflated sides strongly rounded anteriorly, gradually converging but barely less arcuate behind to the gradual sinus, thence parallel to the right and sharp angles; margins narrowly deplanate, with a single series of punctures, the edge finely but sharply reflexed; apex broadly sinuate, wider than the base, with rather blunt-short thickened angles; base transverse, the sides obtusely projecting behind to slight degree; transverse impressions rather deep, sparsely punctate, the median stria fine; foveæ small, somewhat deep, rather close to the angles; elytra two-thirds longer than wide, one-half wider than the prothorax, gradually inflated behind, with broadly arcuate sides, somewhat rapidly rounding at base; surface smooth, with an obtuse arcuate longitudinal ridge at apex; striae moderate, slightly impressed, finely irregular but not definitely punctate, more clearly punctulate basally; intervals not quite flat, the third with four moderate impressed punctures adhering to the third stria. Length 11.5 mm.; width 4.8 mm. Oregon (Corvallis). A single female example.

This distinct species differs from *eschschoitzii* Mén., in its much stouter form, larger head, shorter and much more transverse prothorax and other features; the arcuate ridge at the apex of each elytron is better developed and more distinct.

Nebria formalis n. sp.—Outline slightly broader and more ventricose than in *eschschoitzii* and rather more convex, paler in color, piceous, the thoracic margins more diaphanously pallid; legs similarly long, slender and pale; head nearly as in *eschschoitzii* but without two paler spots between the eyes, though having a transverse space nubilously paler but evident only in the darker specimens; maxillary palpi with relatively shorter third and longer fourth joint; prothorax nearly similar but relatively smaller in size and with deeper and more punctate transverse impressions, the deep and lunate, slightly oblique foveæ traceable anteriorly almost to the middle; scutellum more transverse, ogival; elytra more oval and less oblong, the sides at base being less inwardly rounded, three-fifths longer than wide and one-half wider than the prothorax, slightly more inflated behind the middle, the sides thence anteriorly broadly arcuate and not nearly straight as in *eschschoitzii*; surface more convex, the striae not so fine, much more impressed and more distinctly punctulate; intervals convex suturally, the third with four moderate impressed punctures adjoining the third stria; anterior male tarsi with the first three joints rather widely dilated. Length 10.2–10.9 mm.; width 3.9–4.4 mm. Washington State (Wawawai),—Hyslop. Communicated by Mr. Wade. Two males and two females.

The basal joint of the anterior male tarsi in *eschschoitzii* is scarcely as long as the next two together, while here it is fully as long. The present species differs in its paler coloration, more convex and ventricose form, relatively smaller prothorax, more arcuate sides of the elytra and in some other obvious features; the short longitudinal ridge at the apex of each elytron is nearly similar.

***Carabus* Linn.**

The species *tadatus* Fabr., is common over a large extent of country from Indiana to Colorado; the head is in greater part smooth and is without any conspicuously deep sculpture; *agassii* of LeConte, from Lake Superior, is a synonym of this species, a west coast species with more sculptured head and more elongate form of body having been mistaken by LeConte for *tadatus* in his comparisons. In southwestern Alaska occurs a form resembling *tadatus* but smaller, with relatively much smaller prothorax; it has the head conspicuously sculptured and bicanalate and was named *baccivorus* by Fischer; it is a distinct species and not a

variety of *tadatus*. The west coast form named *oregonensis* by LeConte, is different from *tadatus*, but I have not been able to recognize it among my material; it is allied evidently to the species which I named *franciscanus*, but has the prothorax smaller, scarcely more than half as wide as the elytra, almost opaque and densely and finely rugose; the impressions and rugosities of the head seem to be moderate in development; *oregonensis* also is a distinct species and not a variety of *tadatus*. The following has a more coarsely and deeply biexcavated front than even *franciscanus* and it should also have a specific status:

Carabus bicanaliceps n. sp.—Elongate, moderately convex and but slightly ventricose, the head and pronotum deep black and highly polished, the elytra dark brown and opaculate; under surface shining, blackish-piceous, the legs black; head four-sevenths as wide as the prothorax, with very prominent eyes; surface devoid of fine sculpture of any kind but very coarsely rugose, with a broad, deep and irregular sulcus at each side, extending from near the epistomal apex to a line bordering the eyes posteriorly; the two broad sulci are separated by a prominent ridge, the summit of which is canaliculate; labrum deeply sinuate, the surface deeply excavated medially; antennæ rather thick, black, feebly picescent distally, not quite half as long as the body; prothorax a fifth wider than long, widest before the middle, the sides broadly rounded, becoming feebly oblique and broadly, just visibly sinuate behind the middle, the hind angles evenly and strongly rounded and produced posteriorly; margins strongly reflexed, especially at base, and with the edge thick; base transverse between the lateral lobes; apex rather narrowly sinuate medially, broadly rounded laterally, with thick marginal bead throughout; surface loosely but deeply, coarsely vermiculato-rugose, broadly impressed postero-laterally, the median furrow coarse and very deep; elytra two-thirds longer than wide, less than one-half wider than the prothorax, oval, widest slightly behind the middle, the sides broadly arcuate, rapidly converging at the humeri; apex gradually obtusely ogival; striæ about 26 in number, deep, separated by fine continuous carinæ, the narrow concave intervals very obscurely punctate; foveæ of the three series very deep, finely polished at the bottom, the submarginal series of smaller and closer foveæ distinct. Length 22.0 mm.; width 8.9 mm. Washington State (Olympia). A single female.

Distinguishable from *franciscanus* and *montanicus* by the more opaque elytra, with larger and much deeper foveæ and coarser, deeper, more sulciform and less numerous fine striæ; in *montanicus* the fine striæ are about 30 in number. In the two species mentioned above the elytral foveæ are not connected by a coarser ridge as they are in *bicanaliceps*, and, in *montanicus*, the head is nearly as smooth as in *tadatus* Fabr.

The following belongs to the *tadatus* section but is very different in sculpture and sexual characters:

Carabus stocktonensis n. sp.—Male narrow and very elongate, black or slightly brownish, rather shining; head nearly as in *tadatus* but sparsely punctured basally and with greater extent of rugosity and also more punctured toward the eyes; labrum similar; mandibles short, arcuate, smooth; antennæ similar; prothorax similar, the sides a little more sinuate basally, broadly and less abruptly reflexed toward base; surface more finely and closely punctate, more rapidly declivous at the sides; scutellum smaller; elytra narrower and more elongate, four-fifths longer than wide, one-half wider than the prothorax; humeri more narrowly rounded at base; surface with fine close-set cariniform lines, the summits of which are finely asperulate, the intervals not definitely punctulate as they are in *tadatus*; foveæ very shallow, not metallic; anterior tarsi moderately dilated, densely spongiose beneath the first four joints. Female larger and stouter than the male, similar in general outline and in the sculpture and configuration of the anterior parts, but with somewhat different arrangement of the fine asperulate sculpture of the elytra, the regular close-set lines not being apparent, except laterally, the minute elevations very close-set and generally confused in arrangement. Length (♂ ♀) 19.5–22.0 mm.; width 7.7–9.2 mm. Utah (Eureka and Stockton),—Spalding.

This species differs greatly from *tadatus* in having the first four joints of the anterior male tarsi spongiose beneath; in *tadatus* only the first three joints are so clothed, and in that species the elytra have close-set regular smooth lines, with distinctly though irregularly punctate intervals; the general form of the body is much less elongate than in the present species and the size is smaller.

Of *chamissonis* Fisch., I have a series of between twenty and thirty specimens from St. Paul Island; it is a small species, with short prothorax, and *brachyderus* Wiedem., is a true synonym. The form named *grænlandicus* by Dejean, of which I have four examples from St. Modest, Labrador, is however different from *chamissonis* and is without doubt specifically valid; it is much larger in size, the prothorax less abbreviated and more sparsely and finely sculptured, and the hind angles project further posteriorly. The following is related closely to *grænlandicus* but is a little smaller, distinctly narrower and with more evenly rounded sides of the prothorax.

Carabus grænlandicus ssp. *washingtoni* nov.—Narrower and a little smaller than *grænlandicus* and also more convex, deep and rather less shining black; head slightly more than half as wide as the prothorax,

with rather small and very prominent eyes, the surface sparsely punctate, nearly smooth anteriorly, where there is a shallow longitudinal impression at each side, becoming deep on the epistoma; prothorax two-fifths wider than long, widest barely before the middle, with subevenly arcuate sides, similarly sculptured; elytra narrower and more convex, nearly three-fourths longer than wide, three-sevenths wider than the prothorax, oblong-oval, widest near the middle, strongly sculptured in the style of *tadatus* as in *grænlandicus*, but with only about 16 or 17 striæ, which are coarse and irregular, with coarser ridges connecting the moderate foveæ. Length 12.4–14.0 mm.; width 5.7–6.3 mm. New Hampshire (Mt. Washington). Three male examples.

Differs from *grænlandicus* more especially in the slightly smaller size, narrower outline, more convex surface and more transverse prothorax—not widest near apical third as in that species but near the middle and with more evenly rounded sides.

Calosoma Web.

Of the forms in this genus described hitherto as allied to *calida*, the type of *expansa* Csy., is simply an unusually developed male of that species and consequently a synonym. The others are valid, either as species or subspecies; *stellata* is a subspecies, and I am now inclined to believe that the large New Mexican *laticollis* should rather be considered a species than a subspecies. The form described by LeConte under the name *lepida* I have not seen and can therefore form no useful opinion regarding it. The two following are specifically different from *calida* however:

Calosoma comes n. sp.—Smaller, narrower and more parallel than *calida*, though nearly similar in color, ornamentation and sculpture; head smaller, but slightly over half as wide as the prothorax, finely, sparsely punctate and rugulose, becoming gradually smooth anteriorly; eyes similar; mandibles straighter and narrower; antennæ with the fifth joint glabrous, pubescent on the edges, shorter than in *calida*, the sixth joint but little more than twice as long as wide; prothorax very nearly twice as wide as long, widest at the middle, the sides broadly, moderately reflexed and beaded and very evenly, circularly arcuate throughout, the basal angles moderately produced behind and obtusely rounded; surface nearly similar, the latero-basal impressions more evenly concave; elytra narrower and more elongate, fully one-half longer than wide and subequal in width to the prothorax, the sides parallel and feebly, evenly arcuate, the reflexed edges feebly diaphanous; general sculpture and the metallic foveæ as in *calida*. Length (♂) 19.0 mm.; width 7.0 mm. A single male from an unrecorded region in the Northwest Territory.

Besides the characters above mentioned, this species differs from *calida* in the more slender mandibles, shorter antennæ, the sixth joint in the latter being more compressed and nearly three times as long as wide in the male, and especially in the vestiture of the fifth joint, which in *calida* is pubescent throughout, except very narrowly along the axial line of the sides. The third anterior male tarsal joint is twice as wide as long, while in *calida* it is very much less transverse.

Calosoma concreta n. sp.—Shorter, relatively broader and more convex than *calida*, deep black in color throughout, shining but without trace of metallic lustre; head distinctly more than half as wide as the prothorax, with abruptly very prominent eyes, the surface finely, evenly and sparsely punctate and somewhat rugulose throughout; epistoma deeply impressed in the middle at apex, the lateral grooves deep; mandibles short, subcircularly arcuate; antennæ rather short, the fifth joint broadly but not definitely glabrous at the sides; prothorax short, fully twice as wide as long, evenly and circularly rounded and broadly declivousubreflexed, the beading of the edge fine and feeble; basal angles as in *calida*; surface convex, rather shining, finely and sparsely punctulate, becoming coarsely, densely punctate and rugulose peripherally; foveæ concave, deepest at some distance from the sides; elytra short, about a third longer than wide, a fifth wider than the prothorax, parallel, with feebly arcuate sides, obtusely ogival at apex; sculpture of the same type as in *calida* but with the dark green ocellate foveæ very much deeper, rather larger and more close-set, the longitudinally connecting intervals relatively broader, more convex and without transverse lines, the transverse lines of the three intermediate intervals feebler. Length (♂) 18.8 mm.; width 8.8 mm. A single male apparently from north of Lake Superior.

This species is strikingly different from *calida* in its shorter, more compact and more convex form, much closer and deeper elytral foveæ, connected by wider and more convex smooth surfaces, shorter mandibles, more abbreviated antennæ, the outer joints being very much shorter, and in several other structural features. The fourth anterior male tarsal joint in *calida* is about as long as wide, the apex much more produced internally than externally, while in *concreta* it is nearly twice as wide as long, with the apex subevenly emarginate, not noticeably more produced internally.

The three following species belong to the same section as *can-cellata* Esch. (*ænescens* and *moniliata* of LeConte), but in each case are distinguished by some conspicuous special characters; they were all taken by Mr. Nunenmacher:

Calosoma sagax n. sp.—Rather broadly oblong and convex, shining, black, without metallic lustre outside of the dorsal foveæ; head large, two-thirds as wide as the prothorax, with the usual prominent eyes; surface rather loosely, subvermiculately sculptured, with intermingled rather fine punctures; epistoma only feebly impressed at the middle, the deep lateral excavations extending to apical third; mandibles semi-circularly rounded externally; antennæ short, as long as the thoracic width, with joints five to eight glabrous medio-basally on the more compressed sides, the glabrous area successively diminishing on the following joints; prothorax just visibly less than twice as wide as long, widest slightly before the middle, the sides broadly arcuate, only slightly oblique posteriorly, the basal angles rounded as usual but only very slightly produced behind; lateral edge rather sharply reflexed, more broadly at base; surface shining, vermicularly but not very coarsely or densely rugulose or punctate; basal foveæ rather deep, at some distance from the sides; median stria moderate, subentire; elytra short, about a fourth longer than wide, a third wider than the prothorax, barely visibly wider behind the middle, the apex very obtusely ogival; humeral angles rapidly rounded; surface with sets composed of three rows of moderate impressed irregular punctures, the sets separated by a wide smooth and rather convex interval, bearing the moderate but rather deep, umbilicate foveæ, the bottoms of which are bright metallic green; anterior male tarsi broadly dilated. Length (♂) 17.0 mm.; width 8.0 mm. California (Lassen Co.).

The second and third anterior male tarsal joints are subsimilar in form, the latter slightly the smaller, and they are both about twice as wide as long. This species differs from the others of this series in the relatively large head among other important features.

Calosoma rectilatera n. sp.—Much narrower than the preceding, deep black, without metallic ground lustre, rather shining, the anterior parts dullish; head well developed, not so large as in the preceding but three-fifths as wide as the prothorax, with prominent eyes; surface moderately and rather closely punctured, very densely on the neck and more coarsely rugose toward each eye; epistoma very broadly and deeply impressed, the impression separated from each of the deep lateral excavations by a rounded oblique ridge; mandibles moderate, circularly rounded externally, finely and but feebly and partially sculptured; antennæ moderate though distinctly longer than the thoracic width, with joints five to eleven glabrous on the flatter sides, either entirely, or, in the case of the outer joints, in a small basal area; prothorax of peculiar form, four-fifths wider than long, parallel, the sides very feebly arcuate, gradually more rounding apically; rather narrowly reflexed, more so basally, the angles moderately produced and broadly rounded; surface with close-set punctures, becoming rugulose peripherally and especially coarse and dense in the foveæ, which are rounded, rather deep and at some distance from the sides; elytra oblong, two-fifths longer than wide, a fourth or fifth wider than the prothorax, just visibly wider behind,

rapidly obtusely ogival at apex, the humeri strongly and rapidly rounded; surface with the punctures of the triplicate series small and well separated, badly defined; intervals bearing the foveæ notably convex, smooth, the foveæ small, shallow and metallic green, the submarginal green line of asperate punctures distinct. Length (♂) 16.5 mm.; width 7.3 mm. California (Palm Spring).

The anterior male tarsi are not quite so strongly dilated as in *sagax* and the three dilated joints together have a more oval outline; the second and third joints are less than twice as wide as long, the inner edge nearly straight, the outer more oblique and arcuate. The close-set row of punctures along the lower edge of the femora is more conspicuous.

Calosoma præstans n. sp.—Oblong, convex, much larger in size, moderately shining, black, the anterior parts with faint, the elytra with strong, cupreous lustre; under surface and legs deep shining black; head rather large, two-thirds as wide as the prothorax, the eyes abruptly prominent, the surface closely punctato-rugose; epistoma broadly and feebly impressed medially, with the lateral excavations unusually wide; mandibles moderate, evenly arcuate externally; antennæ but slightly longer than the thoracic width, the fifth joint pubescent throughout, except in a shining glabrous basal area; prothorax relatively moderate in size, four-fifths wider than long, widest barely before the middle, the sides parallel, subevenly and moderately rounded, the edge sharply reflexed; basal angles well produced, circularly rounded; surface coarsely and densely punctate, more coarsely rugose basally, the foveæ distant from the sides and moderately deep, slightly elongate; basal and apical beading unusually thick; elytra parallel and with feebly arcuate sides, oblong, convex, four-sevenths longer than wide, not quite one-half wider than the prothorax, the humeri rapidly and strongly rounded; foveæ small, shallow, metallic green, the smooth elevations joining them longitudinally short, distinct; triple intermediate series irregularly and shallowly comminuted, each with a series of asperulate punctures. Length (♀) 21.0 mm.; width 8.7 mm. California (Butte Co.).

This species is very distinct among the others of this section by its larger size, bright cupreous elytra and other characters; the male is not at hand and would probably show some interesting tarsal modifications.

Transversa Csy., from San Diego, resembles *sagax* considerably, though having a less highly polished and more shallowly sculptured surface, but the mandibles are rather longer and are much less strongly arcuate externally in the female type of that species than in the male of *sagax*. *Esuriens* Csy., also from San Diego, is a smaller, narrower and more parallel species than either *sagax* or

transversa; it is represented in my collection only by the female. *Cancellata* is represented by four specimens from various parts of Oregon.

The two following species belong to the *tepida* section, but are much smaller in size:

Calosoma pellax n. sp.—Rather small and narrow, moderately convex, not very shining, deep black throughout; head fully three-fourths as wide as the prothorax, with the usual abruptly very prominent eyes; surface closely, deeply punctured and subrugose, more coarsely rugose toward each eye, broadly impressed anteriorly; epistoma not impressed medially at apex, the lateral grooves deep, separated from the apex by a thin margin; mandibles unusually long and narrow, rapidly rounding toward tip; antennæ nearly one-half longer than the thoracic width, the joints five to nine with a broad feeble glabrous groove along the flat sides; prothorax relatively small, two-thirds wider than long, the sides parallel, evenly and circularly rounded from apex to base and sharply reflexed, widely and vertically so at base, the basal angles much narrower than in the preceding section, rounded and feebly produced behind; surface deeply and very closely punctate, more coarsely and rugosely so peripherally, the median stria very fine; foveæ rather small, deeply concave, adjoining the reflexed sides; elytra two-fifths longer than wide, fully one-half wider than the prothorax, distinctly inflated behind, the sides broadly arcuate, rapidly rounded at the humeri, where the edge has three distinct serrations; surface with about fifteen fine and feeble striae, much confused at the sides, the intervals crossed by deep lines forming asperulate tessellation; umbilicate foveæ of the three series very moderate, their bottoms bright cupreous; third anterior male tarsal joint short, twice as wide as long. Length (♂) 16.0 mm.; width 7.2 mm. A single specimen without indication of locality, but probably from Oregon or adjacent region.

Very distinct in its rather small size, less convex surface, canaliculate antennal joints, long and slender mandibles and other features.

The species described by me some years ago under the name *indigens*, differs from *pellax* in its broader prothorax, widest sensibly before and not at the middle, in its shorter, more regularly arcuate mandibles and convex, uncanaliculate and more glabrous fifth antennal joint. From *tepida* it differs in its smaller size and rather narrower form, in the much less densely strigilato-rugose mandibles, trapezoidal and not briefly parallel epistoma, less posteriorly projecting hind thoracic angles, more slender tarsi and shorter tarsal claws; it is however, somewhat more closely allied to *tepida* than it is to any other described species.

Calosoma semicuprea n. sp.—Form rather convex, more ventricose than in the preceding, rather shining black, the anterior parts without trace of metallic lustre, the elytra bright cupreous, with bright greenish or cupreous foveæ; under surface and legs deep black; head fully three-fifths as wide as the prothorax, with very prominent eyes; surface sparsely and irregularly punctate basally, rugose toward the eyes, the latter with prominent superciliary ridge, and smooth medially, rugose laterally toward apex; epistoma nearly smooth, feebly impressed at the middle of the apex, the lateral excavations deep, nearly smooth; mandibles subcircularly rounded externally; antennæ nearly as in *tepida*; prothorax four-fifths wider than long, widest barely before the middle, with evenly rounded sides, which are rather broadly reflexed, strongly so basally, the angles rounded, feebly produced; surface finely vermiculato-punctulate, coarsely rugose at base and in the moderate concave foveæ, the beading at base and apex somewhat poorly defined; elytra two-fifths longer than wide, one-half wider than the prothorax, feebly dilated behind, with broadly arcuate and well reflexed sides, the edge basally with four or five distinct serrules; surface with sculpture nearly as in *tepida*, except that the metallic foveæ are very much larger and very conspicuous; anterior male tarsi of the *tepida* type. Length (♂) 17.0 mm.; width 7.8 mm. A single specimen without indication of locality, but probably from the northern Rocky Mountain region.

This species is altogether distinct from *tepida* in coloration, in the smaller anterior parts, sculpture of the head and epistoma and especially in the very much larger and more brilliant metallic foveæ of the elytra; the dimensions of *tepida* are 20.0–21.0 by 9.0–9.8 mm.

The following is a remarkably distinct species, larger and very much stouter than *semicuprea* and with relatively larger head and more elongate mandibles:

Calosoma cogitans n. sp.—Stout, convex, moderately shining, deep black, the elytra subcupreous in the deep impressed anastomosing lines and with greenish-cupreous foveæ, which are almost as conspicuous as in *calida*; under surface deep shining black; head two-thirds as wide as the prothorax, with very prominent eyes; surface deeply and rather coarsely, closely and irregularly punctate and subrugulose; epistoma deeply impressed in median fourth at apex, the lateral excavations deep; mandibles three-fourths as long as the width across the eyes, rather narrow, circularly rounded externally and closely sculptured; antennæ two-fifths as long as the body; prothorax very nearly twice as wide as long, widest at the middle, the sides thence arcuate anteriorly and oblique and nearly straight posteriorly, the angles strongly rounded and distinctly projecting behind; surface deeply and closely punctate, more coarsely and rugosely so peripherally; side margins sharply reflexed, more broadly toward base, the foveæ large and rather shallow; median line fine, entire; apical beading thick, the basal obsolete; elytra oblong,

T. L. Casey, Mem. Col. IX, Jan. 1920.

inflated posteriorly, a third longer than wide, nearly two-thirds wider than the prothorax, the humeri strongly rounded; surface with confused flattened tessellate sculpture, the tegulae frequently forming transverse rugulation, closely subgraniform toward sides and apex; legs moderate; hind tarsi four-fifths as long as the tibiae. Length (♀) 22.0 mm.; width 10.0 mm. Utah (Stockton),—Spalding.

The conspicuous metallic foveae of the elytra are about ten to fourteen in number in the series, more widely separated suturally than externally; the metallic foveae of the submarginal line are small and close-set. This species is allied to the preceding.

The species from Vancouver Island named *irregularis* by Walker, is said to be æneous-black, 12 lines (24 mm.) in length, the head rugulose in front and the elytra each with three discal series of golden points. If the length is accurately stated it is even much larger than *tepida* and is probably a valid species, though nothing more definite can be said of it at present. Probably *cogitans* is its nearest relative from the Rocky Mountain region, though distinct without much doubt.

The form which I announced some years ago under the name *Calosoma davidsoni* as a subspecies or variety of *semilavis*, I now believe to be entitled to a fully specific status; the prothorax is of a distinctly different habitus, being relatively smaller, much narrower, more parallel and less arcuate laterally in both sexes; the following, however, is probably a subspecies of *semilavis*:

Calosoma semilævis ssp. *adjutor* nov.—Body in general form and habitus almost exactly as in *semilavis*, but differing in the sculpture of the pronotum, which in the latter is finely, densely punctate throughout, more coarsely base and apex medially, the punctures coarser, dense and rugose toward the sides; here however the punctures centrally are very fine and sparse, becoming coarse but well separated and not at all rugose basally and apically toward the middle, but almost similarly coarse, dense and rugose toward the sides; it differs also in the maxillary palpi, the fourth joint of which in *semilavis* (♂) is nearly three-fourths longer than wide, while here it is stouter and very much shorter, being less than one-half longer than wide. Length (♂) 23.0 mm.; width 10.0 mm. California (Alameda).

The surface of the head is much less densely punctate in *adjutor*, which at present is represented by only one specimen.

There is a group of species allied to *prominens* Lec., but smaller in size and especially very much narrower, with relatively smaller prothorax. The first of this group to be made known was *parvi-*

collis Fall, from southern California, Arizona and Nevada; then I described *clemens*, from southern Nevada, and the following is still another related species:

***Calosoma pertinax* n. sp.**—Rather slender and convex, deep shining black throughout, without trace of metallic lustre, except a feeble bluish tinge on the sixteenth interval, from slightly before the middle to the apex, this interval only in the metallic part bearing a regular series of small subasperate punctures; head three-fifths as wide as the prothorax, the eyes well developed and very prominent; surface with coarse and well spaced punctures, becoming smaller anteriorly and on the neck, having anteriorly two feeble longitudinal impressions, the epistoma not definitely impressed medially, the lateral sulci large, deep and perfectly smooth; mandibles slender, regularly arcuate and very densely rugose; antennæ longer than the head and prothorax, the latter three-fourths wider than long, angularly prominent at the sides medially, thence arcuate anteriorly and straight, sometimes slightly crenulate posteriorly, the angles oblique, narrow and very acute; base feebly arcuate, slightly narrower than the apex; surface finely, remotely punctulate and feebly creased, becoming coarsely punctate or rugose medio-apically and more broadly toward base; edges feebly reflexed, the foveæ large but only very feebly impressed; median stria well impressed, subentire; elytra nearly three-fourths longer than wide, four-fifths wider than the prothorax, very slightly wider behind the middle than at base; humeri rapidly rounded, the edges basally with four or five long and very feeble serrules; surface micro-reticulate, finely, feebly striate, the striae with small punctures, which are transversely connected by very coarse deep grooves, delimiting medio-posteriorly prominent tegulae in a large sub-basal region, the transverse lines posteriorly gradually feeble, then only visible along the middle of the intervals as fine punctulation; foveæ very small, sometimes metallic-green; anterior male tarsi moderately dilated, the third joint two-thirds wider than long. Length (σ) 20.5 mm.; width 9.0 mm. New Mexico (Albuquerque).—Snow.

The largest of these three species is *parvicollis*, having the epistoma impressed in the middle from apex nearly to the base, the anterior male tarsi more dilated, with the third joint twice as wide as long and the extreme tip of the abdomen rugose. In *clemens* the anterior male tarsi are much more narrowly dilated, the third joint only one-half wider than long, the abdominal tip feebly rugulose and the epistoma more narrowly impressed in the middle to a little behind the centre. In *pertinax* the corresponding characters are mentioned above; the abdominal apex is nearly smooth, finely punctate, with the usual four setigerous punctures. In *clemens* the angles at the sides of the prothorax are less acute than in the other two, and in *pertinax* the prothorax is shorter than in *parviceps*

and relatively even smaller in size. All these comparisons are taken from the male.

Callisthenes Fisch.

The species of this genus are numerous, but have been greatly confused in the scanty literature concerning them. The species of the *pimelioides* group are distinguished from those of the *luxatus* group, by having the sculpture stronger and denser on the anterior parts and more granuliform on the elytra; they may be separated readily, so far as known to me, as follows:

Elytra with the rows of teguliform elevations separated by definite and rather deep striæ.....2

Elytra with the tegulæ in regular series, which are not separated by definite striæ.....4

2—Sides of the elytra rather widely and strongly reflexed basally. Small, oblong-suboval, rather convex, black, somewhat shining but without metallic lustre of any kind; head three-fifths as wide as the prothorax, with rather small, moderately prominent eyes; surface with sparse vermiculate creases, more numerous laterally and basally and mingled with a few remote minute punctures; epistoma with broad flat apical beading, the lateral excavations deep; mandibles semicircular externally, much produced inwardly at tip; antennæ as long as the head and prothorax, the pubescent triangular flat area on each joint well developed; prothorax three-fourths wider than long, widest anteriorly but with the sides broadly and feebly arcuate throughout and but slightly oblique behind, sharply and strongly, subevenly reflexed; basal angles well produced posteriorly and unusually narrowly rounded; surface finely, not closely punctate, more coarsely and closely rugose peripherally, the sculpture becoming especially coarse and dense in the foveæ, the deepest part of which is small, rounded and distant from the sides; apical beading broad and thick; stria fine; elytra short, oblong, parallel, with evenly arcuate sides and broadly obtuse apex, barely a fourth longer than wide, not quite one-half wider than the prothorax; tegulæ mutually contiguous and subevenly and moderately convex, subasperately prominent at the middle of their hind margins and, toward the sides and apex, becoming very close and coarsely graniform; anterior male tarsi narrowly dilated; tarsi short. Length (♂) 14.3 mm., width 6.8 mm. Northern Rocky Mountain region.

reflexus n. sp.

Sides of the elytra similarly rather widely reflexed basally, the sculpture and striation very different. Body short, convex, shining, deep black; head moderate, four-sevenths as wide as the prothorax, with only moderately prominent eyes; surface remotely biimpressed anteriorly, finely, sparsely punctate and with some fine irregular impressed lines; epistoma not impressed at apex, the lateral sulci

rather deep; mandibles finely sculptured, not evenly arcuate externally as in the preceding, but more arcuate apically; antennæ short, the fifth joint almost completely glabrous, the succeeding joints each with triangular pubescent area as usual; prothorax not quite twice as wide as long, widest at the middle, the sides anteriorly broadly rounded, moderately oblique and nearly straight in basal half, the produced angles narrowly rounded; edges sharply and somewhat strongly reflexed, a little more so basally; surface minutely and sparsely punctate, rather coarsely but not densely at sides and base; fine feeble lines are also visible throughout; foveæ small and feeble, at base distant from the sides; median stria distinct, entire; elytra very short, barely a fifth longer than wide, two-fifths wider than the prothorax, parallel, with rounded sides and very obtuse apex; tegulæ more convex than usual in the *striatulus* section, the striæ not so regular but finely broken and having fine punctures, the tegulæ at the sides more convex and less close-set, having the form of coarse contiguous granules apically; tegulæ on the disk rather longer than wide; anterior male tarsi very narrowly dilated; tarsi unusually long, the posterior fully as long as the tibiæ. Length (♂) 15.5 mm.; width 7.0 mm. Utah (Stockton),—Spalding.....*utensis* n. sp.

Sides of the elytra toward base narrowly, or at least not conspicuously, reflexed, the sculpture nearly as in *reflexus*, except that the tegulæ become distinctly graniform only toward apex.....3

3—Tegulæ generally rather shorter than wide and somewhat flattened. Body stouter, moderately convex, similar in color and lustre; head three-fifths as wide as the prothorax, with well developed convex eyes; surface with sparse vermiculate creases mingled with small punctures, smooth medially toward apex and on the epistoma; mandibles short, feebly sculptured; antennæ similar but with the triangular pubescent areas less well defined; prothorax broader, very nearly twice as wide as long, widest but little before the middle, the sides arcuate and moderately reflexed, becoming oblique and straighter posteriorly, the angles well produced and narrowly rounded; surface sculpture somewhat as in the preceding but stronger and more uniformly dense throughout; scutellum larger and more broadly triangular; elytra oblong-oval, the parallel sides more strongly, subevenly arcuate and the apex very obtusely subogival, slightly over a fourth longer than wide, not quite one-half wider than the prothorax; anterior male tarsi rather narrowly dilated. Length (♂) 15.0 mm.; width 7.5 mm. Wyoming. Utah,—LeConte.....*striatulus* Lec.

Tegulæ elongate and more convex, each as a rule composed of two tegulæ of the size seen in *striatulus*, the suture between these segments being partially visible at times. Body smaller and narrower, more ventricose, moderately convex, rather strongly shining, deep black; head nearly similar, with small and sparse punctures mingled with some vermiform creases, especially distinct and longitudinal near the eyes, nearly smooth broadly antero-medially; mandibles rather small and slender, circularly rounded externally, only feebly

sculptured; antennæ as long as the head and prothorax, the long pubescent patches as usual; prothorax rather small, two-thirds wider than long, widest near apical third, where the sides are somewhat strongly rounded, thence rather strongly oblique and nearly straight to the angles, which are well produced and unusually narrow, strongly rounded at tip; margins somewhat broadly and strongly reflexed and subequally so throughout; punctures rather small but deep, well separated, coarse peripherally, barely at all so at apex, where the head is very broad and notably flat; surface postero-laterally gradually declivous toward the lobiform angles, there being no distinct impressed fovea; elytra oval, with subparallel and strongly arcuate, sharply reflexed thin sides and gradually subparabolic apex, not quite a third longer than wide, one-half wider than the prothorax, the dividing longitudinal striiform lines rather deep. Length (♂) 13.5–14.3 mm.; width 6.3–6.7 mm. California (Placer Co.). Three examples. *exaratus* Csy.

Tegulæ flatter and subquadrate, rather more widely separated throughout than in either of the two preceding. Body more strongly convex and more ventricose, deep black, rather shining; head fully four-sevenths as wide as the prothorax, the eyes moderately prominent; surface sparsely but somewhat strongly punctate and with some short fine impressed lines, moderately biimpressed anteriorly, the impressions rather coarsely and more closely punctate, the antero-medial surface smooth; epistoma nearly as in the preceding; mandibles unusually small, very feebly, sparsely sculptured; antennæ short as usual, the fifth joint with a triangular and apical, densely pubescent area as in succeeding joints but less developed; prothorax only two-thirds wider than long, widest somewhat before the middle, but with the sides very evenly arcuate from apex to base, in a manner notably differing from any of the allied species, equally and moderately reflexed at the edge throughout, the angles moderately produced and more broadly rounded than in any of the allied species; surface with fine and well separated punctures and fine lines, coarsely, densely rugose laterally but not basally, the stria distinct, entire; foveæ subobsolete, very faintly impressed; scutellum smaller than usual, very short; elytra between a third and fourth longer than wide, three-sevenths wider than the prothorax, oval, with rounded sides and obtusely ogival apex; tegulæ subquadrate, very moderately convex, having the form of well separated granules at the sides, becoming closer apically, the intervening spaces opaculate; striae rather evenly continuous, fine, not at all punctate; hind tarsi much shorter than the tibiae. Length (♀) 16.0 mm.; width 6.9 mm. Utah (Stockton),—Spalding. *semotus* n. sp.

4—Tegulæ flatter, only very slightly convex, more oblong in form and subcontiguous. 5

Tegulæ well separated laterally, more convex and more graniform throughout. 7

5—Head in apical half, except at the sides, nearly smooth, the remainder of its surface with rather coarse, close-set and evenly distributed punctures; body smaller in size. Black throughout, rather shining,

without trace of metallic lustre; head three-fifths as wide as the prothorax, with the eyes moderately prominent, rather narrow, the rugosity not at all close; antennæ as long as the head and prothorax, the fifth joint with a very small shining area having very few punctures and not at all like the longer areas of fine and denser punctures on the succeeding joints; prothorax rather small, scarcely two-thirds wider than long, widest anteriorly, the sides rather strongly rounded, somewhat finely and not strongly reflexed, becoming notably oblique and straight behind the middle, the angles broadly rounded and but very slightly produced behind; surface with sparse and deep but moderate punctures, which are more or less connected by feeble vermiculate lines, coarser and more closely rugose laterally and in the extremely shallow elongate foveæ; stria short, fine; scutellum angularly impressed at base; elytra two-fifths longer than wide, a third wider than the prothorax, oblong-oval, the tegulæ broadly convex, pointed behind, obsolescent at the humeri, not graniform at the sides though taking the form of coarse and widely separated, pointedly convex granules apically; anterior male tarsi very narrowly dilated. Length (♂) 15.5 mm.; width 6.7 mm. Oregon. [*C. zimmermanni* Csy. nec Lec., olim.] **debilis** n. sp.

Head almost uniformly punctate and rather sparsely, the punctures but little smaller and sparser antero-medially, smaller and closer on the neck; body larger and much broader than in *debilis*, deep black, rather shining, the head well developed, fully three-fifths as wide as the prothorax, with more prominent eyes than in *debilis*, the antennæ nearly similar; mandibles more strongly arcuate; prothorax nearly four-fifths wider than long, the general outline and sculpture nearly as in *debilis*, but with the sides much more strongly reflexed, conspicuously so toward base, the produced basal angles more strongly rounded; median stria coarser, deeper and entire; elytra notably short, subquadrate, moderately convex, just visibly longer than wide, nearly one-half wider than the prothorax, the parallel sides broadly arcuate, obtusely ogival at apex, the humeri rather rapidly but not narrowly rounded, the margins sharply and strongly, subevenly reflexed; tegulæ convex, oblong-oval, prominently pointed at their posterior ends, the eighth series with a few small remote asperate punctures; the tegulæ toward the sides and apex are smaller, closer and more graniform; under surface sparsely punctate, the legs and tarsi black. Length (♀) 17.0 mm.; width 8.0 mm. Utah (Parowan),—Spalding. **parowanus** n. sp.

Head much more finely and rather closely punctate, the punctures obsolescent antero-medially, sparse and coarser in a transverse sinuate band extending unbrokenly between the eyes; mandibles short, with notably sparse and rather feeble sculpture; body broader, oblong-oval, somewhat convex, deep black and rather dull in lustre, the elytral tegulæ very moderately convex at the sides and apically. 6

6—Head larger, nearly two-thirds as wide as the prothorax, of the usual

form; fifth antennal joint with a definite narrow area of dense punctures of the same character as the larger densely pubescent areas of the succeeding joints; prothorax three-fourths wider than long, the rounded and moderately reflexed sides oblique and nearly straight in basal half, the angles more narrowly rounded and more produced behind than in *debilis*, very closely, subuniformly punctate to the sides and base, more coarsely in the foveal region, which is flat, the foveæ not evident; elytra only a fourth longer than wide, almost one-half wider than the prothorax, oblong-oval, with rather well marked humeri; tegulæ becoming very fine, feeble and obsolescent on the basal slope. Length (♀) 15.4 mm.; width 7.3 mm. California (locality unrecorded). *tegulatus* Csy.

Head not quite so large, three-fifths as wide as the prothorax, with similarly only moderately convex eyes; fifth antennal joint without trace of fine close punctures, excepting a very few on the upper surface in a small and not sharply defined area; prothorax in outline as in the preceding but somewhat shorter, four-fifths wider than long; punctures somewhat close-set, moderately small, becoming rapidly very coarse and rugose laterally, the reflexed margin more broadly shining and impunctate than in the preceding; foveæ traceable but very shallow, the hind angles as in *tegulatus*; elytra less broad, a third longer than wide, but little more than a third wider than the prothorax; tegulæ more truncate behind than in the preceding, and, on the basal slope, remaining distinct and elevated though smaller in size; narrow depressions of the surface separating the tegulæ with some barely glimpsible greenish lustre, wholly unobservable in *tegulatus*; humeral angles more broadly rounded. Length (♀) 14.6 mm.; width 6.9 mm. California (locality unrecorded). *viator* Csy.

7—Body stout, rather convex, deep black, shining, without trace of metallic lustre, the surface separating the elytral tubercles dull or subopaque; head well developed, fully three-fifths as wide as the prothorax, with somewhat long wide neck, the eyes but very moderately convex; surface with deep and moderate, close-set punctures and some rugosity throughout, the latter denser toward the eyes; mandibles rather short, rugose, the outer outline circular; antennæ nearly as long as the head and prothorax, the fifth joint densely pubescent on the edge in distal half, the pubescent areas of the outer joints more extensive as usual; prothorax fully four-fifths wider than long, widest more or less before the middle, the sides subevenly arcuate but more converging basally, rather sharply and evenly reflexed, the neighboring surface bearing numerous erect setæ throughout the length; basal angles rounded, only moderately produced behind; punctures close-set, not very coarse, becoming a coarse dense vermiculate rugosity laterally and basally, the foveæ narrow, feebly impressed, rather distant from the sides; scutellum longitudinally strigilate; elytra two-fifths (♂) to between a third and fourth (♀) longer than wide, oblong-oval, with arcuate sides and rather distinct humeri, the tegulæ strongly convex, strongly graniform and more separated laterally and apically; anterior male

tarsi distinctly dilated. Length (σ^7 ♀) 14.4–16.0 mm.; width 7.2–7.6 mm. California (Humboldt Co.). Vancouver Island,—Walker.

pimelioides Walk.

Body smaller and narrower than in the preceding, similar in color and lustre; head nearly two-thirds as wide as the prothorax, somewhat elongate, with moderately prominent eyes; surface with moderate, deep and sparse punctures, intermingled with vermiculate rugulæ, smoother antero-medially; mandibles nearly similar; antennæ almost similar, piceous at apex, the fifth joint with the triangular dense patch smaller, occupying much less than apical half of the narrow sides; prothorax narrower, more cordiform, three-fourths wider than long, widest anteriorly, where the sides are strongly rounded, thence notably converging and nearly straight to the base, the angles more produced and narrower, strongly rounded; sculpture nearly similar but nowhere quite so dense, the surface with numerous erect setæ near the reflexed edge; median stria deep, almost entire; scutellum not evenly strigilate; elytra oblong-oval and two-fifths longer than wide, the parallel sides broadly arcuate, the apex obtuse; humeri broadly rounded; sculpture nearly as in the preceding; anterior male tarsi more narrowly dilated than in the preceding. Length (σ^7) 14.3 mm.; width 6.8 mm. California (Yreka, Humboldt Co.),—Levette.....*pustulosus* Csy.

It is but seldom that the above species can be said to be very closely allied among themselves; *pustulosus* is easily distinguishable from *pimelioides* by its smaller size, much narrower form, smaller, less transverse, more rectilinearly narrowed prothorax, less dense sculpture of the anterior parts and more prominent eyes. In a similar way *tegulatus* and *viator* are rather closely allied, but the latter can be distinguished at once by its notably smaller head, relatively less broad but more oval elytra and by the nature of the sculpture on the basal slope near the humeri. The above *pimelioides* answers very well to the short description given by Walker (Nat. in Br. Col., II, p. 312), and the California examples can at least be assumed to be specifically identical.

The following is a remarkable new form in the *luxatus* section:

Callisthenes klamathensis n. sp.—Narrowly elongate-oval, strongly convex, deep polished black, without trace of metallic lustre; head two-thirds as wide as the prothorax, with rather prominent eyes, the surface with fine and remote punctures, intermingled with fine and sparse vermiform scratches, broadly biimpressed anteriorly, the excavations at the sides of the epistoma large and very deep; mandibles moderate, arcuate externally, with moderate sculpture of the usual character; antennæ slender, somewhat longer than the head and prothorax, the flatter sides of the joints glabrous, narrowly so on the outer joints; prothorax only three-fifths wider than long, widest before the middle, the

sides broadly rounded and sharply, subequally reflexed, converging and straighter basally, the angles rather narrow, produced posteriorly and evenly rounded; surface polished, finely and sparsely punctate, much more coarsely but not densely laterally and basally, the foveæ wanting, the surface there being merely flat, the side margin basally rather more strongly reflexed; median stria distinct, entire; elytra evenly oblong-oval, two-fifths longer than wide, two-fifths wider than the prothorax, the humeri gradually rounded; surface very shining, with series of irregular oblong contiguous tegulæ, which are but very slightly convex and separated along their sides by fine, feeble and minutely punctate lines, which do not produce the effect of continuous striæ, the transverse lines fine and feeble and bearing each a small subasperate puncture; toward the sides the tegulæ do not differ in form but become slightly more convex; apically, they become subgraniform; sides of the abdomen toward base coarsely punctate, the short transverse met-episterna sparsely and much less coarsely punctulate; anterior male tarsi narrowly dilated, with coarse black lateral fringes. Length (♂) 15.0 mm.; width 7.0 mm. Oregon (Klamath Co.),—Nunenmacher.

This species is probably narrower than either *monticola* or *nevadensis*, although the latter two are now represented only by the rather stout females; the sculpture of the elytra is very different, there being no regular smooth striæ as in those species, the fine irregularly arcuate lines bordering the tegulæ not forming striæ and having numerous very fine punctures. In the still more aberrant *diffRACTUS*, from New Mexico, the tegulæ, which are irregular and similarly flat, are separated transversely by rather deep short lines, but there is scarcely any trace whatever of longitudinal lines separating them, and the sides of the elytra basally are coarsely serrate; there is no trace of this serration in either *monticola*, *nevadensis* or *klamathensis*. I regret not knowing at present typical examples of the species described by Say, from the Arkansas Valley, as *luxatus*; it is evident that the Sierran species are different, and there is scarcely any probability that *diffRACTUS* can be at all closely related.

It is rather uncertain whether the following species should be placed in *Calosoma* or *Callisthenes*, but most of its characters harmonize better with the latter than with *Calosoma*:

**Callisthenes lævissimus* n. sp.—Oval, strongly convex, highly polished, the upper surface with scarcely a trace of sculpture, black, the elytra broadly rufescent on the suture basally in only the male of the two specimens at hand; under surface very smooth, deep black, the abdomen with some coarse sparse punctures laterally; head small,

about half as wide as the prothorax, with rather prominent eyes; surface smooth, with a very few feeble punctures near the apical angles; epistoma deeply foveate at the middle of the apex, the lateral sulci deep and rather narrow; mandibles moderate, smooth, only feebly arcuate externally; antennæ not quite as long as the head and prothorax, with joints five to eleven finely, closely punctate and pubescent throughout; prothorax three-fourths (σ) to three-fifths (φ) wider than long, parallel, with evenly and circularly rounded, thickly beaded sides, the basal angles broadly rounded but only very slightly produced behind; apical and basal beading wholly wanting; median stria fine, not quite entire; surface smooth, without trace of sculpture of any kind, evenly declivous to the lateral beading and without reflexure near the sides; at a little behind the middle there is a large foveiform puncture, apparently not setigerous; scutellum very broadly and obtusely ogival; elytra oblong-oval, a third longer than wide, a fourth (σ) to three-sevenths (φ) wider than the prothorax, the sides evenly arcuate, the humeri very broadly rounded; surface almost completely devoid of any trace of longitudinal series of punctures, except three rows of small distant and feebly impressed non-metallic foveæ and a submarginal series of fine asperulate punctures; metasternum extremely short behind the coxæ, the met-episterna a third wider than long; anterior male tarsi moderately dilated. Length (σ φ) 14.8–15.5 mm.; width 7.2–7.65 mm. Mexico (Salazar, Mex.),—Wickham.

The fact that these specimens were taken in the same locality as that of *Calosoma diminuta* Bates, the two forms having some striking characters in common, I was led at first to hold *lævissimus* to be the same as *diminutus*, but on considering the description of the latter, and the accompanying figure, more closely, I cannot find much close agreement. In *diminutus*—whether a *Calosoma* or *Callisthenes*—there is apparently a broad feeble reflexure of the thoracic sides and the elytra have regular series of minute punctures, and dorsal foveæ which seem to be conspicuous; in *lævissimus* the latter are small, feeble, very inconspicuous impressed punctures, and series of small punctures are but seldom at all traceable; according to the figure the elytral humeri are much better marked in *diminutus*, and Mr. Bates makes no allusion at all to the conspicuous puncture at each side of the pronotum in *lævissimus*. In this species the antennæ, excepting the four polished basal joints, are finely and densely punctate and pubescent throughout, and without the irregularities noticeable in most of our *Callisthenes*; this, and the very feebly produced basal thoracic angles, might be thought to denote a closer agreement with *Calosoma*, but the body seems to be wingless, the humeral angles being broadly rounded.

Sphæroderus Dej.

The following is a rather interesting subordinate form of *stenostomus* Web.:

Sphæroderus stenostomus ssp. *æqualis* nov.—Narrower and relatively more elongate than *stenostomus*, nearly similar in habitus, coloration and lustre; head similarly, very small and narrow; fourth antennal joint shorter than the second, not equal thereto as in *stenostomus*; prothorax nearly similar but somewhat more abbreviated, the punctures of the foveæ less numerous and not extending transversely between the foveæ as they do in that species; elytra nearly one-half longer than wide, only two-fifths wider than the prothorax, the striæ narrower and less strongly punctate; coarse punctures of the broad epipleura less numerous. Length (♀) 12.5 mm.; width 4.8 mm. Pennsylvania.

The elytra are narrower and relatively longer than in *stenostomus* and less coarsely and less deeply sculptured.

Irachroa Newm.

This is an evidently distinct genus, containing a considerable number of species and representing in the east *Pemphus* and *Brennus* of the west coast. The following is the smallest species known to me, although there are some examples of *ridingsi* and *monongahelæ* which are almost similarly small in size, but the head here is still narrower and the prothorax relatively smaller in size:

Irachroa tenuiceps n. sp.—Polished black, with dark purplish reflection, the head without trace of such coloration, deep black and but little more than half as wide as the prothorax, smooth, the feebly rugulose superciliary impressions joining the smooth deep anterior depressions; epistoma smooth, subquadrate, the suture fine, deeply sinuate; lateral lobes long, smooth; mandibles long, slender, hooked at tip and each with the usual two sharp erect internal teeth; antennæ very slender, pale brown, the first four joints black; prothorax slightly elongate, widest and with subprominent sides a little before the middle, the sides thence evenly, feebly sinuate and oblique to the basal angles, which are extremely obtuse and feebly marked, thence more oblique to the transverse base, which is distinctly narrower than the apex; margins finely but sharply reflexed; foveæ narrow, elongate, slightly punctate, the transverse connecting sulcus very deep; anterior impression deep, angulate; elytra evenly oval, more pointed and somewhat deplanate at apex, scarcely one-half longer than wide, nearly two and one-half times as wide as the prothorax, without humeral angles; striæ strong, very deeply impressed and rather strongly, subcrenately punctate; epipleura strongly, sparsely punctate; anterior male tarsi extremely feebly dilated, very slender, the first three joints spongiöse beneath. Length including mandibles (♂ ♀) 13.8–15.7 mm.; width 5.8–6.7 mm. Pennsylvania (Uniontown),—Brown.

Differs from *monongahelæ* Leng, from the same regions, in its distinctly smaller size, narrower form, narrower and more elongate prothorax, smaller and much narrower head and especially in the still decidedly more slender anterior male tarsi. Among a large series of *monongahelæ* there were two males and two females of this species.

Monongahelæ is a fully valid species, quite different from *ridingsi* in its more ventricose form and much deeper and coarser elytral sculpture; a specimen of *ridingsi* was recently given me very kindly by Mr. Mann; it was taken near Washington.

A large series of the following species has been in my collection for some years under the name *germari* Chd., but it is a smaller form, with narrower prothorax and different anterior male tarsi:

Irichroa mutabilis n. sp.—Strongly ventricose, convex, shining, violaceo-cupreous, varying to bronze or obscure bluish, deep black beneath; head two-thirds as wide as the prothorax; last joint of the palpi variable in form and size; antennæ long and slender; prothorax relatively small, a little longer than wide, not inflated, widest slightly before the middle, where the sides are obtusely subangulate, thence very slightly converging and arcuate to the broadly rounded and slightly prominent apical angles and more converging and very feebly sinuate or straight to the rounded basal angles, the margins abruptly reflexed; surface rather flattened, punctured apically, more broadly basally and narrowly along the sides; transverse impressions deep; elytra not quite one-half longer than wide, two and one-half (♂) to two and three-fourths (♀) wider than the prothorax, the humeri rather rapidly rounding as a rule; striæ coarse, very deep and strongly punctured, the sixth and tenth intervals usually with confused coarse punctures beyond the middle; apical slope with confused punctures; anterior male tarsi coarsely punctate and pubescent above, except along the middle, the first joint broader than the second, the spongiose sole extending to basal third. Length (♂) 19.0–20.5, (♀) 21.5–23.5 mm.; width (♂) 7.9–8.3, (♀) 8.8–9.7 mm. Pennsylvania (Uniontown, on the western slope of the Appalachians),—T. M. Brown.

Differs from *germari* in its rather smaller size, narrower and moderately though evidently elongate prothorax and less extended pubescent sole of the first anterior male tarsal joint; this sole in *germari* extends to the base of the joint.

The following seem to be two varietal forms occurring in the same region:

Irichroa mutabilis ssp. *longicollis* nov.—Nearly similar to *mutabilis* but larger, the elytra rather less convex and the coloration tending more

to darker bluish; prothorax more elongate, about a fifth longer than wide, otherwise nearly similar, except that the angulate sides are even less prominent and the basal angles not quite so broadly rounded; elytra nearly similarly sculptured; anterior male tarsi with the first joint not wider than the second, with the pubescent sole extending to basal fourth. Length (σ^7 ♀) 20.5–23.5 mm.; width 8.7–10.4 mm.

***Irichroa mutabilis* ssp. *modulata* nov.**—Smaller than *mutabilis* and less convex, black, with feeble violaceous lustre on the anterior parts, the elytra bronzed; prothorax small, not distinctly longer than wide, less narrowed at base, the latter three-fifths the maximum width and not barely more than half as it is in *mutabilis*; elytra similar but notably less convex; anterior male tarsi with the first joint not distinctly wider than the second, the spongiose sole extending to between basal third and fourth. Length (σ^7) 19.2 mm.; width 7.9 mm.

The following may be regarded as a subspecies of *violacea* Lec., which apparently is a species distinct from *andrewsi* and not properly a variety:

***Irichroa violacea* ssp. *amplicollis* nov.**—Convex, moderately ventricose, shining, violaceous-black, the elytra brighter cupreo-violaceous; head not quite one-half as wide as the prothorax, the latter a fourth wider than long, the sides abruptly and strongly reflexed, subprominent but rounded just before the middle, thence moderately converging and strongly arcuate to the broadly rounded and subprominent apical angles and more converging and broadly sinuate to the broadly rounded basal angles; base somewhat more than half the maximum width; impressions deep; punctures few and very feeble; elytra oblong-oval, one-half longer than wide, distinctly less than twice as wide as the prothorax, the deep coarse sculpture and the rounded humeri almost as in *andrewsi*; anterior male tarsi rufo-piceous, the first joint with the dense spongiose sole extending virtually to the base, more nearly so than in *andrewsi*. Length (σ^7) 19.7 mm.; width 8.3 mm. North Carolina (Black Mts.),—Beutenmüller.

The almost completely spongiose sole of the first anterior tarsal joint of the male, will distinguish this form from *violacea* quite readily; the prothorax is very much broader than in *andrewsi*, having a width of 4.7 mm. in the type.

The genus *Irichroa* consists of those forms allied to *guyoti*, *andrewsi* and others, having a comparatively small prothorax, not elevated at the hind angles. Other species which have been associated with those mentioned but presenting a very different habitus, being very stout, with larger prothorax elevated at the hind angles, such as *vidua* Dej., *irregularis* Beut., and *leonardi* Harr., do not pertain properly to *Irichroa* but constitute a distinct genus between

Irichroa and *Scaphinotus*, for which I would suggest the name **Megaliridia** (n. gen.).

As will be noted from the description of *tenuiceps*, the slender, straight, internally hooked and spicularly denticulate mandibles, are admirably fitted for seizing and withdrawing the soft bodies of small snails from their shells. These food habits and attendant structures extend, so far as I know, throughout the subfamily Cychrinæ.

Brennus Mots.

A considerable number of undescribed species of this genus have become known in recent years, and I utilize this opportunity to make known those that are in my collection at present. In some cases the types described below have formed part of this collection for many years, awaiting additional confirming evidence. The former literature is so obscure and inadequate that it has been very difficult to come to any positive conclusion in regard to the older species, but it seems evident now that of the two large and rather smooth species found near San Francisco Bay, *striatopunctatus* Chd., has a relatively moderate prothorax, with the base about half the maximum width and *alternatus* Mots., which I formerly identified as *striatopunctatus*, has a relatively large prothorax, with notably broader base than in the true *striatopunctatus*. The species from about Sta. Cruz, of rather large size and with notably inflated hind body, more abbreviated than in the two just mentioned, with coarser striæ and with moderate prothorax, half as wide at base as at the point of maximum width, is *lativentris* Mots. I formerly identified it as *ventricosus* Dej., but the latter is a much smaller species, with the hind body in comparison only moderately inflated; Dejean gives the dimensions as 16.0 by 7.0 mm.; the striæ are distinct to the sides, not broken up on the flanks and my series is from Monterey. *Crenatus* Mots., is slightly larger and stouter, the coarse deep striæ coarsely and crenately punctate, becoming confused only rather near the sides; my series is from Sta. Clara; *fuchsianus* Riv., is a very isolated species of large size and almost quadrate elytra, having feebler broken striæ, alternating with the moderate principal striæ, the sculpture coarse, deep and much confused broadly toward the sides; but it is prin-

cipally remarkable and isolated in the strongly elevated reflexed sides of the prothorax. The species named *ovalis* by Motschulsky is related to *striatopunctatus* and is of about the same form, size and sculpture, but the prothorax is relatively smaller and especially much narrower or less anteriorly inflated; an excellent outline drawing was given by the author, rendering its identification quite certain and I have an example which resembles this drawing exactly.

It seems now that the species which I described as *sinuatus*, probably from Sonoma Co., is the true *interruptus*, about 15.5 to 18.5 mm. in length, and that that identified by me under that name (Annals N. Y. Acad., IX, p. 333), a much smaller species, is still unnamed and may be called *parvulicollis* (nom. nov.). In both this and *interruptus* the prothorax is moderate or small in size, smaller in *parvulicollis*, while in *constrictus* Lec., which I formerly identified as *dissolutus* Schm., the prothorax is relatively much larger and the body rather narrower and less ventricose. In *corpulentus* Csy., the hind body is notably short and inflated, but the prothorax is much larger and more inflated than in *parvulicollis*, it occurs at Oakland. *Dissolutus* Schm., would now appear to be a species from the western slopes of the Sierras, and a female at hand from Mokelumne Hill, Calaveras Co., has a general outline of the elytra somewhat as in *oreophilus*, the male probably much less ventricose; the sculpture is coarse and the striae much broken up toward the sides. *Compositus* Csy., is a very distinct species, with relatively larger prothorax and deep and strongly punctured but only very slightly and sparsely subinterrupted striae, distinct to the side margins, being only very slightly irregular on the flanks. All just mentioned, from *interruptus* (*sinuatus*) to this point, have strong elytral sculpture and more or less interrupted striae; and all except *corpulentus* have bluish or violet reflexed elytral margins.

Brennus decipiens Csy., is a species quite distinct from *striatopunctatus*, being smaller, with closer elytral striation and relatively much narrower thoracic base. The following species is allied somewhat to *decipiens*, but has the elytra more oblong and much more depressed and the antennae longer; the first anterior male tarsal joint is pubescent beneath in less than apical half, whereas in *decipiens* the dense pubescence extends to basal two-fifths:

Brennus subdepressus n. sp.—Deep black and alutaceous, the elytra more shining though micro-reticulate; head not very narrow though but little more than half as wide as the prothorax; surface smooth, with a few transverse wrinkles centrally; antennæ slender, the fifth joint four times as long as wide; prothorax relatively rather large, wider than long, the sides moderately reflexed and strongly circularly rounded, rapidly narrowed behind, becoming parallel in basal fifth or more; base half as wide as the maximum width; transverse impressions distinct, the median stria deep; subbasal longitudinal impressions very feeble; elytra fully one-half longer than wide, just twice as wide as the prothorax, the sides rather rapidly rounding at base, more so than in *decipiens*; side margins well reflexed; surface with thirteen rather fine but deep and even entire striæ, which are rather finely but distinctly punctate; thence to the sides the striæ are confused, coarser, deeper and more coarsely punctured, but they are still traceable as striæ about five in number; epipleura with a series of punctures near the inner edge; tarsi slender, black, the anterior only slightly dilated in the male. Length (σ^7) 17.0 mm.; width 7.8 mm. California (Monterey). A single example.

The prothorax is relatively larger than in *decipiens*, where the fifth antennal joint of the male is evidently less than four times as long as wide, the following joints also distinctly shorter than in *subdepressus*.

Brennus gentilis Csy., is a species altogether distinct from *crenatus* Mots., having much less coarse and very much more finely punctured striæ; in this latter respect it closely resembles *decipiens*, but the elytral striæ are not confused laterally as in the latter and the head and prothorax are both narrower, the sides parallel at base for a shorter distance. The following is allied to *gentilis*, but is very much smaller and with relatively coarser striæ:

Brennus montereyensis n. sp.—Strongly ventricose, convex, black, feebly alutaceous anteriorly, the elytra polished; head notably narrow and elongate, only slightly more than half as wide as the prothorax, smooth, the anterior impressions deep; antennæ piceous, nearly black basally, the fifth joint almost five times as long as wide, this and the following joints distinctly narrower than the fourth; prothorax relatively small, as long as wide, the sides moderately reflexed, subprominent before the middle, rounded anteriorly, oblique and nearly straight thence to the subbasal sinus and, behind this, parallel to the narrowly rounded right basal angles; base half as wide as the maximum width; transverse impressions distinct, the median stria deep; subbasal impressions very faint; elytra oval, a little less than one-half longer than wide, the sides evenly rounding, barely at all more so at base, two and one-half times as wide as the prothorax; striæ coarse, deeply impressed and strongly punctured about to the moderately reflexed side margins, sixteen in number; anterior male tarsi slender, the first joint densely pubescent

T. L. Casey, Mem. Col. IX, Feb. 1920.

beneath only in apical third or fourth; hind tarsi about as long as the tibiae. Length (σ) 13.5 mm.; width 6.3 mm. California (Monterey),—Dunn.

This species is very distinct from *gentilis* in its much smaller size, relatively smaller prothorax, narrower head and coarser elytral punctures and striation; in many respects it closely resembles *integer* Csy., but the strial punctures are more close-set and the side margins more narrowly reflexed and not at all violaceous, as they are feebly in *integer*, and the head is relatively a little narrower, with less prominent eyes; the anterior tarsi are of similar structure in these two species and the size of body is notably small. The elytral humeri are more completely obliterated in *montereyensis* than in either *gentilis* or *integer*.

The following species is related rather closely to *lativentris* Mots. (*ventricosus* Csy. nec Dej.), but has a relatively larger and unusually abbreviated prothorax, flatter strial intervals and longer legs, especially observable in the tarsi; it inhabits the Sierras, while *lativentris* occurs near Sta. Cruz on the coast:

Brennus brevicollis n. sp.—Rather large in size, very convex, alutaceous anteriorly, the elytra shining but micro-reticulate, the surface nowhere metallic; head rather large, twice as long as wide, a little more than half as wide as the prothorax and somewhat wrinkled transversely anteriorly; antennae slender, the fifth joint five times as long as wide; prothorax a sixth wider than long, the sides moderately reflexed, obtusely somewhat prominent at the middle, thence rounded and converging to the rounded apical angles and more converging and nearly straight to the basal sinus, which is in line with the subbasal sulcus, thence parallel to the basal angles, which are rounded; base transverse, more than half the maximum width, the transverse impressions distinct but shallow, the median stria fine but deep; foveae very short and faintly impressed; surface with numerous fine transverse creases; scutellum very short and broadly rounded as usual; elytra three-fifths longer than wide, two and two-fifths times as wide as the prothorax, obliquely acuminate in about apical third, the arcuate sides more rounded at base, the humeri as in *lativentris*; striae rather fine, impressed, about eleven of them regular and with moderate, widely spaced punctures, thence more or less confused, coarser and somewhat more coarsely punctate in about outer two-fifths of the width; margins narrowly reflexed, not metallic. Length (φ) 19.0 mm.; width 9.3 mm. California (Mokelumne Hill, Calaveras Co.),—Blaisdell.

The epipleura have some sparse moderate punctures, more evident than in *lativentris*, but the inner submarginal line of punctures is much less definite than in that species, where also the sides of the prothorax are more widely reflexed.

In a considerable series of species received some time ago as having been collected on St. Paul Island in Bering Sea, there was one *Brennus*; whether or not this had been taken really on St. Paul Island, I have no way of proving, but at any rate it differs from anything else in my collection, being perhaps most closely related to *integer*, differing in its relatively much larger prothorax; it may be described as follows:

***Brennus beringi* n. sp.**—Body small in size, rather convex, deep black, the elytral margins faintly violaceous; elytra polished, the anterior parts strongly shining; head only moderately elongate, half as wide as the prothorax, smooth, with a few feeble transverse wrinkles; antennæ moderate in length, brown, the first four joints black, the fifth not quite four times as long as wide; prothorax relatively large, somewhat wider than long, the sides well reflexed, inflated and subevenly rounded, becoming not very abruptly oblique and nearly straight behind to the subbasal sinus, thence parallel and straight in almost basal fifth; base transverse, with a feeble beveled beading, distinctly less than half the maximum width; transverse impressions rather deep, the stria deeply impressed; foveæ wholly obsolete, the surface with rather close-set fine creases; elytra oval and somewhat over one-half longer than wide, not quite twice as wide as the prothorax, the arcuate sides gradually but little more rounded basally; striæ coarse, deeply impressed, strongly punctured, the sculpture confused or broken in lateral third, those which are more or less entire eleven in number; margins rather broadly reflexed; anterior male tarsi narrow and slender; apical third of the first and the entire second and third joints spongy-pubescent beneath. Length (♂) 13.0 mm.; width 6.0 mm. Alaska (St. Paul Island).

This species is named in honor of the distinguished Danish navigator Vitus Bering, this being the most modern spelling of the name, though formerly it frequently took the form of Behring or even Beering; when accurately known the spelling in the specific name can be altered.

The following is one of the more notably elongate of the non-metallic species of the genus:

***Brennus procerus* n. sp.**—Very elongate, rather convex, black, moderately shining throughout; head well developed, slightly more than half as wide as the prothorax, smooth though with rather numerous pronounced transverse wrinkles; epistoma deeply canaliculate apically, the suture fine, deeply sinuate; antennæ rather more than half as long as the body; prothorax relatively rather large, barely visibly wider than long, the sides strongly reflexed, inflated and subevenly arcuate anteriorly, gradually oblique and nearly straight posteriorly, becoming rapidly parallel in basal sixth; transverse impressions distinct, the posterior bisinuate; stria sharply and deeply impressed; foveæ faintly

visible near basal third; surface with numerous fine creases, coarser and more conspicuous basally; elytra fully four-fifths longer than wide, not quite twice as wide as the prothorax, symmetric, the sides broadly, evenly arcuate and but little more so basally; apex gradually sharply ogival; striæ rather coarse and deeply impressed, strongly punctured, becoming more or less confused and broken in nearly outer half, the margins very narrowly reflexed, not at all metallic; anterior male tarsi slender, the apical third of the first and the second and third joints densely spongiöse beneath. Length (♂) 17.5 mm.; width 7.3 mm. California (Piedmont, Alameda Co.),—Nunenmacher.

This species may be placed near *compositus* Csy., but is much more elongate and with more narrowed thoracic base, this being narrower in *procerus* and wider in *compositus* than half the maximum width, but in both the prothorax is relatively larger than in *interruptus*; it also comes near *constrictus* Lec. (*dissolutus* Csy. nec Schm.), which also has that part relatively rather large in size and the thoracic base even more narrowed than in *procerus*, but the hind body is more ventricose and the striæ finer and with the intervals more interrupted in *constrictus*:

The species described by Prof. Wickham (Pr. Ent. Soc. Wash., 21, p. 170), under the name *Pseudonomaretus manni*,* is closely allied in most respects to *Brennus symmetricus* Csy., being merely a little narrower, with the finer elytral striæ relatively more separated internally and closer externally. It belongs to the great Pacific coastal genus *Brennus*, although the anterior male tarsi differ in being more broadly dilated. It is singular that this marked discrepancy in structure of the anterior male tarsi was not more fully dwelt upon by the author, as it constitutes the most remarkable structural peculiarity of the species.

The following is one of the more distinctly defined of the *marginatus* section:

Brennus columbianus n. sp.—Male elongate-suboval, convex, rather shining, the elytra polished, the head black, the pronotum black, with faint violaceous lustre, the elytra bright greenish-æneous, becoming more cupreous basally, the moderately reflexed side margins bright blue

* As part of a scheme to promote uniformity in nomenclature, it has become an unwritten law to attach a single *i* to all names of persons, in forming the specific name. Under a uniform rule of this kind some ambiguity can be avoided. For instance, if the specific designation were founded upon the family name Jacobi, the specific name *jacobii*, under such a rule, would indicate this, but, if the rule be not observed consistently, it would be impossible to determine whether the name of the person honored might not be Jacob—Latinized to Jacobius.

or greenish; under surface and legs deep polished black, the epipleura violaceous; head narrow, only half as wide as the prothorax; antennæ slender, not quite as long as the elytra; prothorax large, slightly wider than long, the strongly rounded and moderately reflexed sides becoming abruptly oblique and nearly straight in basal half, the angles obtuse, rounded; base transverse, rather wider than the apex and distinctly more than half the maximum width; impressions and foveæ distinct, the latter extending well before the middle; elytra evenly elongate-oval, three-fourths longer than wide, one-half wider than the prothorax, the sides gradually but little more rounded basally, the striæ very coarse and deep, slightly irregular and about thirteen in number; intervals convex, more or less interrupted; strial punctures coarse, deep; anterior tarsi very slender, the second and third joints and the first in apical half spongiose beneath; last ventral segment with a small apical sinus. Female much larger than the male, with relatively smaller prothorax and with the metallic lustre much less pronounced, the elytral striæ not quite so coarse, close-set or deep, very irregular; head half as wide as the prothorax, the latter very nearly as long as wide, otherwise almost as in the male; elytra elongate-oval, more gradually arcuately attenuate behind than in the male, two-thirds longer than wide, very nearly twice as wide as the prothorax. Length (♂) 15.5, (♀) 17.0 mm.; width (♂) 5.8, (♀) 6.8 mm. British Columbia (Victoria).

The female, when compared with the female type of *insularis* Csy., has less brilliant metallic elytra, which are also less elongate, more gradually acuminate behind and less coarsely or deeply striate, the prothorax relatively a little smaller in size, the head decidedly narrower; in *insularis* it is much more than half as wide as the prothorax and, in the latter, the reflexed elytral margins are bright golden, while in *columbianus* they are bright blue or green as stated.

Of the smaller species with metallic coloration and coarsely, deeply and irregularly striate elytra, allied to *marginatus*, there are many forms having a subordinate status; *marginatus* itself is represented before me by a large series of between thirty and forty specimens, comprised in the collections from St. Paul Island, Alaska, alluded to before under *beringi*; in every one of these specimens, varying from 10 to 14 mm. in length, the side margins of the elytra are brilliantly golden, rarely feebly greenish-golden; this is the true *marginatus*. Taken abundantly in British Columbia and Washington State by Keen and others, there is a form of similar length but more slender, having darker metallic coloration and invariably green elytral margins, there being no exception in about forty specimens examined; I take this to be *gracilis* Gehin, the locality having been quoted erroneously by the author, as it is

undoubtedly British Columbian and not Mexican. Then, from Fort Wrangell, in southern Alaska, there is another form, with the hind body slightly shorter and more inflated than in *gracilis*, similarly with bright green elytral margins, but with the sides of the prothorax toward base more distinctly sinuate; the elytral sculpture is coarser and deeper than in the female of *gracilis*; the female type is 13.8 by 5.4 mm. in dimensions and this variety may be known as *wrangelli* (n. subsp.). Finally, from Helena, Mont., I have a male specimen of very small size, convex form, rather ventricose, much more so in fact than in the males of *marginatus* and *gracilis*, black, shining, with violaceous elytra, having a narrow blue margin; head slightly more than half as wide as the prothorax, which is about as long as wide, evenly narrowed in basal half, with the base slightly more than half the maximum width, the elytra coarsely, deeply sculptured, evenly oval, three-fourths longer than wide and scarcely twice as wide as the prothorax; this variety may be called *montanicus* (n. subsp.). The type is 11.0 by 4.4 mm. in dimensions and the anterior male tarsi are slender, the basal joint spongiose only in apical third, the second and third throughout. In all these close allies of *marginatus*, the male is very much smaller and more slender than the female.

The following seems to be a distinct species of this *marginatus* section, with larger prothorax and more gradually posteriorly pointed elytra:

Brennus oregonus n. sp.—Rather strongly ventricose, moderately convex, somewhat alutaceous and faintly bluish-black on the pronotum, the elytra cupreous, with bright green reflexed margins; under surface and legs shining black; head smooth, four-sevenths as wide as the prothorax, the antennæ long and slender; prothorax relatively not so small as in *confusus*, as long as wide, the sides slightly prominent just before the middle, rounded anteriorly, oblique and straight thence posteriorly to the base, which is just visibly more than half the maximum width; impressions, stria and foveæ all rather deep and distinct, the foveæ extending evidently before the middle; elytra widest well before the middle, the sides rounded, gradually more feebly arcuate and converging thence for a long distance to the acute tip, three-fifths longer than wide, evidently less than twice as wide as the prothorax; disk flattened or concave suturally before the middle, the sutural elevation strong and unbroken along the scutellum and base; striæ notably coarse, deep and irregular, very coarsely punctate suturally, less so laterally, thirteen in number; anterior male tarsi slender, the soles of the second

and third joints and less than apical third of the first spongiose. Length (σ^7) 13.5 mm.; width 5.5 mm. Oregon.

Allied somewhat to *confusus* Csy., but with more abbreviated, more gradually posteriorly attenuate and more coarsely, closely and deeply sculptured elytra.

There are a number of forms closely allied to *cordatus* Lec., but different; there is, however, so close a community of habitus, that I could not venture to suggest a higher status than that of the subspecies for them; those at present in my collection are as follows:

Prothorax distinctly wider than long. Deep black, highly polished throughout the upper surface, excepting the head with very faint violaceous lustre; head broader, distinctly more than half as wide as the prothorax, very smooth; fifth antennal joint more than four times as long as wide; prothorax with inflated and evenly arcuate sides, becoming parallel in basal fifth or sixth, the angles broadly rounded; transverse impressions and longitudinal foveæ rather deep and distinct, the median stria deeply impressed, subentire; elytra widest somewhat before the middle, gradually arcuately acute behind, more parallel basally, with rather rapidly rounding humeri, three-fourths longer than wide, four-fifths wider than the prothorax; surface rather flattened, the striae coarse, very feebly impressed, the punctures coarse, isolated and along virtually unimpressed striae laterally; margins sharply and very narrowly but strongly reflexed, not metallic; tarsi black, slender, the anterior of the male slender, scarcely at all dilated, the second and third joints and small apical area of the first loosely spongy-pubescent beneath, the fourth with longer, finer hairs beneath. Length (σ^7) 12.8 mm.; width 5.2 mm. California (Monterey). Sta. Clara Co.,—LeConte.....***cordatus* Lec.**

Prothorax much narrower, as long as wide; head narrower.....2

2—Tarsi black. Surface polished, deep black, without distinct violaceous lustre; head somewhat more than half as wide as the prothorax; fifth antennal joint shorter, a little less than four times as long as wide; prothorax subprominently rounded just before the middle, the sides broadly arcuate and feebly converging thence to the apex, oblique and straighter behind, gradually becoming almost parallel basally, the angles moderately rounded; impressions and foveæ distinct; elytra two-thirds longer than wide, not quite twice as wide as the prothorax, very gradually arcuately acuminate behind from before the middle, the humeri very rapidly rounded; sculpture nearly as in the preceding, the punctures not quite so coarse. Length (σ^7) 12.9 mm.; width 5.0 mm. California (near San Francisco Bay).....***vernificatus* n. subsp.**

Tarsi pale brownish-testaceous. Polished, deep black, without trace of violaceous lustre, larger, more elongate than in the preceding; head similar; fifth antennal joint four times as long as wide; prothorax

as in *verniscatus* but relatively somewhat larger, the sides feebly sinuate behind and not becoming subparallel but oblique to the base, the angles more broadly rounded; sides before the slightly ante-median prominence more converging to the apex than in the preceding, the impressions and foveæ almost similar; base narrower than half the maximum width, not equal thereto as it is in *verniscatus*; elytra larger, four-fifths longer than wide, nearly twice as wide as the prothorax, more evenly oblong-suboval, widest more nearly at the middle and more rapidly arcuately narrowing posteriad, the humeri less strongly rounded; sculpture as in *verniscatus*, less coarse than in *cordatus*; tarsi very slender. Length (♀) 13.3 mm.; width 5.4 mm. California (Sta. Cruz Mts.),—Harford.

rufitarsis n. subsp.

It is impossible at present to determine the true relationship of these three forms, all of which are very rare individually, and it seems appropriate to suggest for them the status of subspecies until it becomes possible to gather more material evidence. The larger head, wider and more transverse prothorax and coarser elytral sculpture of the single example of *cordatus* are not essentially male characters, for the elytra in the single female of *verniscatus* are narrower than in this male, a condition unknown in this genus within the limits of true species.

Trechus Clairv.

In a short review of our *Trechus* species in the preceding number of these Memoirs, I unfortunately overlooked some descriptions by Mr. Schaeffer (J. N. Y. Ent. Soc., 1915, p. 47) and quite naturally have had some solicitation in regard to synonymy, but on reading the author's references to *T. utahensis* and *coloradensis*, am convinced that neither of these could be included in my material; the former is far larger than any of my species, and *coloradensis*, so far as can be judged by the four published lines, also differs, the elytra being as in *chalybæus* and not dilated, oval and relatively much wider, as they are in *saxatilis* Csy., said to have been taken in Colorado by Levette. In regard to *borealis* Schf., however, it seemed at first that *brumalis* Csy., also from Labrador, must be synonymous; so, on my request, Mr. Schaeffer very obligingly sent me two specimens of *borealis*, one, typical, from Battle Harbor, Labrador, the other from Port aux Port Bay, St. George, Newfoundland, both, as well as the type of *brumalis*, being males. The two specimens sent by Mr. Schaeffer represent two distinct species,

the first, or true *borealis*, having a larger prothorax, only about a fourth wider than long, with the sides basally becoming broadly and feebly but distinctly sinuate; the second, from Newfoundland, having a relatively smaller prothorax, with the sides arcuate from apex very nearly to the base, becoming just visibly sinuate for a short distance before the more obtuse basal angles; the prothorax in the Newfoundland specimen is fully a third wider than long. Now the species which I named *brumalis*, from W. St. Modest, Labrador, much more nearly resembles the Newfoundland species than it does *borealis* Schf., but it differs from both of those mentioned, in the relatively smaller fourth antennal joint, this being shorter than the second joint, while in the two just compared, the fourth joint is distinctly longer than the second, more evidently so in *borealis* itself. So we are entirely safe in considering *brumalis* and *borealis* as different species, and I think that the Newfoundland species is also valid and still undescribed.

About a month before my article on *Trechus* appeared, a genus *Thalassotrechus* was published by Dr. Van Dyke, founded upon a species called *nigripennis*; this proves to be congeneric with my interpretation of *Trechus barbaræ* Horn, as I see from specimens of *nigripennis* kindly sent me by Dr. Blaisdell; it seems apparent therefore, that *Anatrechus* Csy., must be placed in synonymy. *T. nigripennis* is more elongate and slender than my assumed *barbaræ* and has much shorter antennæ, but the peculiar coarse elytral punctures are nearly alike in the two, which would make the language of G. H. Horn, in describing *barbaræ*, altogether inexplicable. I am also unable to understand the pin label "Pasadena" on my specimen of what would appear to be *barbaræ*, as received from the collection of the late Mr. Fuchs. As Dr. Horn was usually a careful observer, it is possible that *T. barbaræ* may not be exactly the same as the species which I assumed represented it, and, if the conditions are really as described by that author, *barbaræ* and *nigripennis* would have to be placed in different genera; it is desirable that the type of *barbaræ* should be again inspected.

Patrobus Dej.

The species identified and described by me as *tenuis* Lec. (Mem. Col. VIII, p. 396), is not the *tenuis* of LeConte at all, but an entirely

different thing, which may take the name *tritius* (nom. nov.). The true *tenuis*, or at least a species which agrees with the original description in every respect, is represented before me by a male and female, also taken at Marquette by Sherman; it resembles *tritius* in form and size, though a little stouter and more parallel, but the prothorax differs greatly, being only a little wider than the head, subquadrate and not rather strongly transverse as in *tritius*, and it is completely devoid of the deep punctate anterior transverse impression of that species, making its resemblance to *Pterostichus*, where it was placed by LeConte, rather striking; the elytral striae are less strongly punctate and become much feebler apically; the first two joints of the anterior male tarsi are similarly well dilated.

Pheryphes n. gen.

The four species *tarsalis* and *serripes* Lec., and *sequoirarum* and *spissitarsis* Csy., form a group, distinguishable at once from the other species constituting the genus *Hypherpes*, by their broader and more parallel form and relatively larger head; in addition to these features, the hind tarsi are relatively shorter and generally much thicker, the joints more rapidly narrowed from apex to base. The above name is proposed for these species.

Hypherpes Chd.

A few additional undescribed species in this genus have come to light recently and may be known by the following characters:

Hypherpes lassulus n. sp.—Rather narrow and depressed, feebly convex, brownish-black, the under surface and legs rufo-piceous; surface only moderately shining, the elytra micro-reticulate; head two-thirds as wide as the prothorax, narrowed behind the eyes, which are moderate in size and prominence; anterior impressions rather deep, smooth; antennae compressed, not quite as long as the head and prothorax, the latter as long as wide, widest anteriorly, the sides broadly and subevenly arcuate, gradually more oblique posteriorly, becoming broadly, feebly sinuate basally, the angles right and sharply defined; transverse impressions obsolescent, the median stria deep, not entire; foveae narrow, feeble, elongate and smooth, traceable not quite to the middle, the surface posteriorly thence to the sides feebly concave, with a fine and feeble impression along the margin near the base, the latter broadly sinuate medially, narrower than the broadly and deeply sinuate apex, finely margined, the margin gradually obsolete medially; elytra three-fourths longer than wide, two-fifths wider than the prothorax; humeri

not denticulate; striae deep and abrupt, finely punctulate, the oblique scutellar stria evident but not long; intervals nearly flat; prosternal process margined throughout. Length (♀) 11.8 mm.; width 4.0 mm. California (Olancho, Inyo Co.),—Dury.

May be placed near *arcanus*, but the prothorax is more narrowed toward base and the elytral striae do not become so deep and coarsely impressed toward the sides.

Hypherpes pergracilis n. sp.—Elongate, slender and rather convex, somewhat shining, black, the legs pallescent basally, the anterior tarsi rufescent; head slightly elongate, three-fifths as wide as the prothorax, the eyes moderate and only slightly convex; anterior impressions somewhat broad and smooth, curving outwardly behind; antennae but just visibly compressed, distinctly longer than the head and prothorax, the latter somewhat longer than wide, widest just before the middle, the sides moderately, subevenly arcuate, converging behind, becoming sinuate, parallel in fully basal sixth, the angles right and very sharply marked; transverse impressions obtuse, feeble and barely traceable, the median stria rather fine but deep, slightly biabbreviated; foveae smooth, obtusely and feebly impressed in basal third, the surface thence to the sides flattened or feebly concave, the posterior setigerous puncture somewhat distinct, the margins finely reflexed; base narrower than the deeply sinuate apex, not margined laterally; elytra twice as long as wide, a third wider than the prothorax, elongate-oval, the sides not more arcuate basally, the humeri denticulate; striae moderate, impressed, a little coarser toward the sides, finely and feebly punctulate, the scutellar stria, as well as the subscutellar puncture, completely obsolete; intervals micro-reticulate, not quite flat, convex laterally and apically; prosternal process margined throughout. Length (♀) 13.8 mm.; width 4.6 mm. California (Olancho, Inyo Co.),—Dury.

This species may be placed near *panticulatus*, having an almost identical form of prothorax, but with very much narrower and more elongate elytra, without trace of the scutellar stria so distinct in the latter species; it is much smaller than *spraguei* Lec., which also has a distinct scutellar stria.

Hypherpes sufflatus n. sp.—Form rather stout, convex, deep black and polished throughout above and beneath, the legs blackish-piceous; head only moderate in size, four-sevenths as wide as the prothorax, the eyes rather prominent, the anterior impressions parallel, deep, inflated and sinuous outwardly behind; antennae rather stout, as long as the head and prothorax, the latter relatively large and convex, slightly wider than long, widest at anterior two-fifths, the sides regularly arcuate and finely reflexed, oblique and straight posteriorly, the angles obtuse, with rather blunt tips; base rectilinear, as wide as the moderately sinuate apex and not margined laterally; transverse impressions very obtusely and feebly marked, the stria distinct, biabbreviated; foveae smooth, broadly and

rather deeply impressed, traceable almost to the middle, the surface thence to the sides feebly convex, flat at base; elytra oblong-oval, not three-fifths longer than wide, about a fourth wider than the prothorax, the sides gradually a little more rounded basally, the humeri finely denticulate; striæ coarse, very deeply impressed, smooth, not in the least punctulate; subscutellar puncture distinct, with a short oblique scutellar stria; intervals equal throughout, rather strongly convex; prosternal process margined. Length (♀) 12.8 mm.; width 5.0 mm. A single example unlabeled in the Levette collection and probably from Indiana.

Belongs to the *adoxus* group, but much shorter and stouter than any member of that small eastern group known to me, and it may be distinguished by the absence of the short sinuation of the thoracic sides at base; in *zephyrus* Csy., which also belongs to this group, the sides are sinuate at base for a notably great distance; *rejectus* Lec., seems also to be distinct from *adoxus* in its more elongate form of body; the other varietal forms described by LeConte, named *subarcuatus* and *sustentus*, I have not seen, but by description at least, they do not seem to approach *sufflatus* in any way closely.

Euferonia Csy.

The species of this genus are rather numerous and have a very distinctive appearance; they appear to be peculiar to eastern North America; the following has been sent me recently by Mr. Chas. Dury, of Cincinnati:

Euferonia roanica n. sp.—Narrower and more elongate than *coracina*, convex and deep polished black, the tarsi and palpi piceous; head slightly elongate, fully three-fifths as wide as the prothorax, with rather prominent eyes; anterior impressions deep and straight, parallel and broad; last palpal joint slender, much shorter than the third, narrowly truncate at tip; antennæ but slightly compressed, a little longer than the head and prothorax, the latter fully as long as wide, the sides subparallel, almost evenly arcuate, strongly, equally reflexed, the basal angles very obtuse, blunt at tip; base arcuate laterally, not quite as wide as the moderately sinuate apex having rounded angles; transverse impressions obtuse and feeble; foveæ deeply concave and somewhat punctured, parallel, nearly twice as long as wide, the surface separating them from marginal gutter elevated and subcariniform; median stria deeply impressed and subentire; elytra parallel, with feebly arcuate sides, more rounding basally, nearly three-fourths longer than wide, between a third and fourth wider than the prothorax, gradually rounding in almost apical third, the sinus very distinct; striæ coarse, very deeply impressed, smooth or not definitely punctulate; intervals very convex, subequal throughout, the

third with two punctures, the anterior, at two-fifths, much the larger; also, on the left elytron of the type, having a large and apparently adventitious puncture very near the base; male anterior tarsi moderately dilated, nearly as in *coracina*. Length (σ^7) 16.0 mm.; width 5.5 mm. North Carolina (Roan Mountain).

Differs from *coracina* in its much narrower form, narrower, deeper and more elongate thoracic foveæ and deeper subapical sinus of the elytra.

The two following close relatives of *coracina* seem to be worthy of special names, as they are plainly separable on observation; they were mentioned by the writer on a former occasion (Mem. Col. VIII, p. 370) and, as the original type of *coracina* seems to have been lost, the identification of *coracina* as a common species extending from Lake Superior to New York and New Jersey, and as described (l. c.), may be regarded as permanent:

Euferonia coracina ssp. *venator* nov.—Larger and more elongate than *coracina*, similar in its deep black color and shining lustre; head almost similar, the anterior impressions not so outwardly flexed behind; prothorax nearly similar but more arcuate at the sides; elytra more elongate, nearly three-fourths longer than wide; anterior tarsi of the male more broadly dilated. Length (σ^7 ♀) 16.7–17.3 mm.; width 6.1–6.25 mm. Pennsylvania (Danville),—Champlain.

Easily distinguishable from *coracina* by its more elongate form, larger size, notably longer elytra and more broadly dilated anterior male tarsi. As is often to be noted, the head in the female is larger than in the male.

Euferonia coracina ssp. *ludibunda* nov.—Much smaller than *coracina* and of narrower form, even more convex, polished black; elytra narrower, the sides more feebly and gradually rounded basally, the posterior sinus deeper; prothorax narrower and much less transverse; last palpal joint equal in length to the third. Length (♀) 14.2 mm.; width 4.8 mm. Pennsylvania (Buena Vista Spring, Franklin Co.).

The type is quite distinct in appearance from the female of *coracina*, the size being much smaller, the prothorax with more narrowed base, this being very evidently narrower than the apex and not equal thereto as in *coracina*, and the form of the body is decidedly narrower; as represented by five examples, the true *coracina* is 15.8–16.8 by 5.7–6.2 mm. in dimensions.

The conception of subspecific relationship in regard to these two forms is simply an hypothesis, and that they are both more

properly species different from *coracina*, will not improbably be proved at some future time and with more evidence at hand.

Cryobius Chd.

The following species is represented in my collection by a considerable series:

Cryobius washingtoni n. sp.—Elongate-oval, rather strongly convex, black, polished, the legs bright rufous; head as wide as long, three-fourths as wide as the prothorax, the eyes prominent; impressions rather long, interrupted; mandibles and palpi rufous; antennæ rather heavy, somewhat more (♂) to less (♀) than half as long as the body, nearly black or paler basally; prothorax barely visibly wider than long, the sides broadly rounded and finely reflexed, more oblique and very feebly sinuate basally; base transverse, not margined laterally and as wide as the sinuate apex having blunt angles, the basal right and very sharp; median stria fine, not quite entire; transverse impressions moderate, the anterior sharper and deeper; foveæ linear in basal two-fifths, rather deeply impressed and feebly punctulate; near the outer margin there is a short punctate channel at base; elytra oblong-suboval, more inflated and oval in the female, nearly three-fourths longer than wide, a fourth wider than the prothorax; humeri not denticulate, the apices oblique, more or less subsinuate; striæ distinct and impressed suturally, fine to subobsolete externally, finely punctate except apically, the intervals flat, feebly convex suturally, the third with two to three punctures; anterior male tarsi with the first three joints rather strongly dilated. Length (♂ ♀) 7.0–8.0 mm.; width 2.4–2.9 mm. New Hampshire (White Mts.).

I have had this species in my collection for many years under the name *hudsonicus* Lec., but in the latter the elytra are apparently less convex and the third interval has three to four punctures; the legs are paler rufous in *washingtoni*.

The following species I have had for some years under the name *confusus* Mots., which was described from the Kurile Islands, but it is evidently different:

Cryobius patulus n. sp.—Rather stout, oblong-suboval, only moderately convex, polished black above and beneath, the epipleura piceous-black, the legs paler, rufo-piceous; head not quite three-fourths as wide as the prothorax, the eyes moderate though notably prominent; anterior impressions concave, feebly punctulate; mandibles dark, the palpi pale, rufous; antennæ blackish, paler basally, fully half as long as the body; prothorax a fourth wider than long, widest before the middle, the sides rather strongly rounded, distinctly reflexed, with the gutter deep but narrow, equal; toward the basal angles, which are right and very sharp, the sides become feebly sinuate; anterior impression obsolescent, the posterior feeble, the median stria fine, impressed, biabbre-

viated; foveæ linear, coarse, deeply impressed and punctulate in basal two-fifths; surface thence to the sides convex, with a coarse intermediate punctate groove in basal fourth; elytra one-half longer than wide to a little less, scarcely a third wider than the prothorax, the arcuate sides a little more rounded basally, the subapical sinus feeble; edges rufous posteriorly; striæ fine but rather deeply impressed, almost smooth or feebly punctate externally; intervals very feebly convex, the third with two or three punctures adjacent to the second stria, the first a little before the middle; scutellar stria very short, the puncture distinct; anterior male tarsi with the first three joints rather strongly dilated. Length (σ^7) 7.3 mm.; width 2.75–2.8 mm. British Columbia (Stickine River Cañon),—Wickham.

Distinguishable by its rather broad and more than usually parallel form and moderate convexity; the thoracic base is feebly sinuate medially, as wide as the apex and not margined laterally.

Ferestria Leng

The male in this genus seems to be much rarer than the female, and it was only recently, on receiving some additional material from Mr. Löding, that I have been able to observe its tarsal characters. In the male the anterior tarsi are very moderately dilated, the under surface of the first three joints having two series, in mutual contact, of elongate white subgelatinous plates, crossed by fine distant transverse lines; this, at least, being the condition in *castigata*. In the female the first two or three joints of the anterior tarsi are sometimes, but apparently not in all the species, obliquely and acutely prolonged internally at apex. The recognizable taxonomic forms in this genus are more numerous than hitherto supposed, and among the six examples sent from Mobile by Mr. Löding, I am obliged to recognize four, which are given the specific status provisionally and until more abundant material can be obtained. These four forms may be set forth in tabular arrangement as follows:

Elytral striæ with feeble but distinct punctures.....	2
Elytral striæ without obvious punctuation.....	3
2—Anterior tarsi (φ) slender throughout, the basal joints not or very feebly asymmetric. Body of short and rather stout form, polished black, the legs piceo-rufous, the palpi slender; prothorax shorter, nearly one-half wider than long, the denticle at the sides at the posterior setigerous pore acute, prominent and very near the base, which is about half the maximum width; elytra oblong-oval, very gradually arcuately ogival posteriorly; punctures rather strongly	

- marked in all the feeble striæ. Length (♀) 8.6–8.8 mm.; width 3.3–3.4 mm. Alabama (Mobile). Two almost perfectly similar specimens. *nanula* Csy.
- Anterior tarsi (♀) not so equally slender throughout, the two basal joints notably wider and strongly asymmetric, acutely produced internally at apex. Body not so small and rather more elongate, convex, polished black, the legs obscure rufous; head a little larger, the anterior impressions similarly deep, remotely separated and diverging; mandibles a little longer, thick; maxillary palpi similarly dark rufous but stouter, especially the thick fusiform fourth joint; prothorax not so short, two-fifths wider than long, otherwise nearly similar, except that the subapical incised transverse line is more arcuate and, medially, more distant from the apical margin, the base narrower, not half the maximum width, and the subbasal marginal denticle small and very feeble and at a greater distance from the base, the sides from denticle to base more evenly continuing the curvature of the posterior part of the sides; elytra nearly similar in outline, a fifth wider than the prothorax and but slightly more than twice as long, the striæ more widely, very feebly impressed and with punctures evident throughout the width but feebler and almost completely disappearing under certain angles of view. Length (♀) 10.0 mm.; width 3.45 mm. Alabama (Mobile). One example. *simiola* n. sp.
- 3—Male more parallel, convex, polished and very smooth, rufo-castaneous in color; head nearly as in the preceding species and with similarly thick antennæ; anterior impressions more nearly parallel; prothorax of nearly similar outline but only a third wider than long, the sides subparallel, rapidly rounding at apex, converging basally, the subbasal denticle at some distance from the base and almost completely obsolete, the foveæ, anterior incised line and median stria as usual; elytra of the same outline, fully one-half longer than wide, but not evidently wider than the prothorax; surface with vestiges of feebly impressed smooth striæ at certain angles of view; anterior tarsi very moderately dilated, convex above, the joints virtually symmetric. Female more abbreviated than the male but otherwise nearly similar, the anterior cephalic impressions more strongly diverging as in the preceding species, the prothorax shorter, with the posterior denticle strong, prominent and relatively nearer the base; anterior tarsi more slender but with the first three joints strongly and obliquely produced and acute internally at apex; elytra more distinctly wider than the prothorax than in the male; maxillary palpi with the fourth joint not very stout, gradually narrowed in apical half, the apex narrowly truncate. Length (♂ ♀) 9.0–9.2 mm.; width 2.85–3.0 mm. Alabama (Mobile). Two examples. *castigata* n. sp.
- Female still more abbreviated than in the preceding, also with relatively smaller head and prothorax and more rapidly rounded elytral humeri, deep polished black, the legs rufo-piceous, the mandibles smaller, as usual with a few oblique strigæ; cephalic impressed lines very moderately diverging; last palpal joint more pointed at

apex; prothorax of nearly similar form and outline, but with the sides apically more gradually rounding, the posterior denticle as in the female of *castigata*, the anterior incised line and median stria similar; elytra oblong-oval, with strongly rounded humeri, less than one-half longer than wide, between a third and fourth wider than the prothorax; impressed punctureless striae very evident at certain angles of view; anterior tarsi slender, the basal joints almost symmetric, the inner apical angles barely perceptibly more acute than the outer. Length (♀) 8.3 mm.; width 2.7 mm. Alabama (Mobile). One example.....*bullata* n. sp.

It is probable that all the above forms are more or less closely related to *laevipennis* Lec., from Georgia, but the author states that in the latter the prothorax is feebly, transversely rugose and that it is transversely impressed anteriorly and posteriorly. The type of *castigata* is a male, this differing unusually from the female, not only in its rather more elongate and parallel form, but still more notably in the size and position of the latero-basal denticle of the prothorax; I am in fact not quite certain that the male and female associated above belong truly to the same species, the very pallid color perhaps being due to immaturity in one or both of them, but, in *obsoleta* Say, at any rate, the pale coloration seems to be natural.

Evarthrinus Csy.

A number of species recently received already necessitate some rearrangement of the genera allied to *Evarthrus*. *Evarthrus enormis* Csy., must be removed from that genus and placed in *Eumolops*, where it is distinguished by a larger head and much shorter and feebler basal sinus of the thoracic sides than in any other species; as *nonnitens* Lec., is probably allied to *enormis*, this too may be assigned to *Eumolops*.

The genus *Evarthrinus* was announced (Mem. Col. VIII, p. 357) as a subgenus of *Eumolops*, more on the possession of three elytral punctures than any other differential feature, but it is in reality a distinct genus and should be so regarded. The prothorax is of a different outline, being much narrower at base than at apex, and the dorsal punctures of the elytra vary from one to three, being rather constantly three in *deceptus* and *impolitus*, but one in the others at hand, except in a male of *sodalis*, where they are two in number. The species of *Evarthrinus* are all notably narrower than

in *Eumolops* and are much more diversified in size, *lilliputicus* being as small as the average size in *Ferestria* or *Gastrosticta*. The eleven species of *Evarthrinus* in my collection may be known as follows:

Elytra with three dorsal punctures in both sexes; prothorax with a deep and entire apical incised line. [*EVARTHINUS* in sp.].....2

Elytra with one puncture, very rarely with two, the prothorax without an incised line—medially at least. [*EVARTHROPS* n. subgen.]....4

2—Elytra with a short but distinct scutellar stria. Body (♀) subparallel, moderately convex, deep black, rather shining, the elytra opaque; head moderately large, the anterior sulci parallel, the mandibles coarsely strigose; prothorax shorter, three-sevenths wider than long, the sides parallel, with thick reflexed margins, subevenly arcuate, becoming parallel in about basal eighth; surface feebly concave transversely near the base, the foveæ linear, with an obtuse ridge near the margin; elytra two-thirds longer than wide, only a fifth wider than the prothorax, the striae rather coarsely impressed and strongly punctate, gradually fine and subimpunctate apically; seventh interval swollen basally. Length (♀) 16.0 mm.; width 4.9 mm. Indiana.....*deceptus* Csy.

Elytra without trace of scutellar stria, the subscutellar puncture similarly large however; prothorax less transverse; body less parallel...3

3—Size larger, deep black, rather convex, shining, the elytra but little less opaculate in the male than in the female; head nearly as in the preceding, the mandibles a little larger, the anterior sulci parallel; palpi similarly with pale and truncate tip; prothorax scarcely a third wider than long, the sides parallel, subcircularly rounded and reflexed, the gutter a little wider behind than before the middle; at base they become parallel; base broadly, feebly sinuate except at the sides; surface with distant feeble rugulae, feebly transversely impressed near the base, the foveæ linear, rather widely separated from the marginal ridge by a feeble and uneven concavity; elytra oblong-suboval, gradually arcuately narrowing behind, with very feeble sinus, two-thirds to three-fourths longer than wide and a third (♀) or a fourth (♂) wider than the prothorax, the striae coarse, deeply impressed and coarsely punctate, gradually very fine and with minute, remote punctures distally; seventh interval tumid at base; anterior male tarsi strongly dilated. Length (♂ ♀) 16.2–17.8 mm.; width 5.8–6.2 mm. Indiana,—Levette collection.

minax n. sp.

Size smaller, subparallel, feebly ventricose in the female, black, rather shining, with opaculate elytra in both sexes; head a little smaller, four-sevenths as wide as the prothorax, the anterior sulci similar, the mandibles smaller and with less numerous oblique grooves; prothorax rather more than a third wider than long, in form nearly as in *minax*, except that the sides are more gradually rounded behind the middle and the transverse basal impression obsolete; foveæ, submarginal ridge and widely spaced feeble rugulae almost

similar; elytra not quite so elongate, with similar punctured striae; base of each elytron similarly declivo-concave, the prominence of the seventh interval at base not quite so marked; anterior male tarsi strongly dilated. Length (σ^7 ♀) 14.5–14.9 mm.; width 5.2–5.35 mm. Texas..... *impolitus* Csy.

4—Sides of the prothorax becoming parallel for some distance before the basal angles—about a sixth to eighth of the total length.....5

Sides of the prothorax becoming parallel for only a very short distance before the basal angles; body sometimes very small in size.....7

5—Sides of the prothorax subobliquely and feebly rounded posteriorly from rather before the middle. Form rather more abbreviated, convex, deep black, wholly polished (σ^7), polished, with the elytra feebly alutaceous though scarcely opaque (♀); head well developed, nearly two-thirds as wide as the prothorax, the eyes prominent; anterior sulci remote, parallel; mandibles with rather few oblique furrows; palpi dark rufous, paler and obtusely rounded at apex; antennae rather short; prothorax a third or fourth wider than long, the side margins formed chiefly by a moderately thick bead; surface with a few faint transverse rugulae, the anterior incised line obsolete medially; foveae oblong, deeply concave, the inner margin broadly sinuate, the outer the submarginal ridge and the bottom slightly irregular; just inward and near the fovea there is a small irregular impression; elytra one-half to three-fifths longer than wide, a third (♀) to two-fifths (σ^7) wider than the prothorax, rather rapidly rounded behind; striae somewhat fine, equidistant, feebly impressed, with small but distinct punctures, obsolescent behind; scutellar stria wanting; intervals flat (♀), very feebly convex (σ^7); anterior male tarsi rather strongly dilated. Length (σ^7 ♀) 15.8–17.0 mm.; width 6.1–6.3 mm. Pennsylvania (Camphill and Rockville),—Champlain..... *furtivus* Lec.

Sides of the prothorax parallel, evenly and subcircularly rounded from apex to the basal constriction, narrowly reflexed as usual, with slightly thickened edge.....6

6—Striae deeply impressed, the intervals notably convex and equal in width. Elongate-oval, rather convex, black, the legs rufescent, highly polished throughout in the male; head slightly elongate, three-fifths as wide as the prothorax, the eyes only moderately convex; sulci deep, parallel, the furrows of the mandibles very coarse, becoming fine near the inner edge; antennae longer than in *furtivus*, as long as the head and prothorax, the latter a third wider than long, with very feeble and widely concave vestiges of anterior and posterior transverse impression, the apical incised line visible only near the sides; transverse rugulae widely separated as usual, rather distinct; foveae oblong, nearly smooth, deeply concave, the outer ridge joining the margin basally, the puncture at the angles deep, elongate; inner adjacent impression very feeble; elytra oblong-oval, nearly three-fourths longer than wide, scarcely a fourth wider than the prothorax, the deep striae strongly punctured, feeble apically; scutellar stria distinct but short; anterior male tarsi

- strongly dilated. Length (σ^7) 17.6 mm.; width 6.6 mm. Florida (locality not indicated).....*sulcatus* Csy.
- Striæ much less coarse, only feebly impressed, the intervals almost flat (φ), very feebly convex (σ^7), alternating in width in both sexes through about inner half of the width; scutellar stria wholly wanting. Body subparallel (σ^7), broader and more ventricose (φ), black, the legs more piceous, polished throughout (σ^7), the elytra of the female opaque; surface rather strongly convex; head moderately large, slightly larger in the female, about three-fifths as wide as the prothorax; eyes prominent, the anterior sulci short, slightly diverging; mandibles as in the preceding; maxillary palpi rufous, the last joint rather broadly truncate; antennæ not quite as long as the head and prothorax, the latter nearly two-fifths wider than long, the transverse impressions subobsolete, the median stria more widely impressed near basal fourth; foveæ elongate, very deeply concave and feebly rugose, the outer ridge adjacent to the margin and rather thin; apical incised line fine and only visible laterally; elytra oblong-oval, nearly two-thirds (σ^7) or one-half (φ) longer than wide, a fifth (σ^7) to a third (φ) wider than the prothorax; punctures of the striæ moderate in size, deep and rather close-set, obsolescent apically, the striæ however notably distinct throughout; anterior male tarsi pale rufous, the first three joints rather strongly dilated and subequal in width. Length (σ^7 φ) 17.2-18.3 mm.; width 5.9-7.0 mm. Iowa (Keokuk).

alternans n. sp.

- 7—Larger species, the sides of the prothorax rapidly arcuately oblique only well behind the middle.....8
- Small species, the thoracic sides finely reflexed, more gradually oblique posteriorly from well before the middle, the sinus before the basal angles still shorter.....10
- 8—Sides of the prothorax very evenly, circularly arcuate from apex to the short basal sinus. Body narrow, moderately convex, black, the legs and under surface rufo-piceous; surface shining, the elytra alutaceous but not densely opaque in the female; head rather large, elongate, somewhat more than three-fifths as wide as the prothorax, with unusually small and only moderately prominent eyes; anterior sulci distant, nearly parallel; mandibular furrows coarse, the last palpal joint shorter than the third, rather slender but widely truncate; antennæ not as long as the head and prothorax, the latter a third wider than long, the sides narrowly reflexed, the short basal sinus shallow, the short sides thence to the rather obtuse basal angles converging and not parallel; apical incised line visible laterally, close to the apical margin; stria deeper at basal fourth; transverse impressions obsolescent, the sparse rugulæ very feeble or obliterated; foveæ moderate, rather short, irregular, the concave bottom with distant transverse rugulæ; obtuse outer ridge adjacent to the margin; puncture at the angles coarse, forming a slightly elongate groove; elytra oblong-oval and three-fourths longer than wide, only about a fifth wider than the prothorax, very gradually ogival behind, with short feeble sinus; striæ moderate, slightly

impressed and with rather small but distinct punctures, obsolescent apically; scutellar stria extremely short or obsolete; intervals very feebly convex, equal in width; dorsal puncture on the second stria at three-fifths. Length (♀) 15.8 mm.; width 5.6 mm. A single example from the Levette collection, without indication of locality but probably from Indiana.....*retractus* n. sp.

Sides of the prothorax not evenly arcuate, the greatest width at or even a little behind the middle, the sides thence anteriorly only very feebly converging and much less arcuate and converging than posteriorly. .9

9—Form elongate, moderately convex, evidently ventricose, black, the legs and sometimes the under surface piceo-rufous; upper surface (♂) polished throughout, the elytra with feeble micro-reticulation, or (♀) shining, with opaculate elytra; head three-fifths as wide as the prothorax, with remote and slightly diverging anterior sulci, the mandibles covered, except as usual externally, with coarse oblique strigilation; palpi truncate at tip, the antennæ not quite as long as the head and prothorax, thick as usual; prothorax only a fourth or fifth wider than long, the sides very narrowly reflexed, the basal sinus shallow, the short portion thence to the obtuse but distinct basal angles, almost parallel; apical incised line visible laterally, the surface without transverse impressions, the median stria coarsely impressed, the remote rugulæ feeble; foveæ irregularly impressed, nearly smooth, the outer ridge not at the margin and three-fourths as long as the inner line; inner impression near the foveæ very feeble; elytra two-thirds longer than wide, a third to two-fifths wider than the prothorax, oblong-oval, the subapical sinus long and very feeble; striæ moderate, slightly impressed, the punctures small but distinct, obsolete apically, the scutellar stria wanting; intervals very feebly convex in both sexes; anterior male tarsi pale rufous, well dilated. Length (♂ ♀) 16.0–17.8 mm.; width 5.9–6.2 mm. Ohio and Indiana. [*Evarthrus fatuus* Lec.].

sodalis Lec.

Form narrower, convex, highly polished throughout in the male, deep black, the legs black; head as in *sodalis* but not quite so large, with similarly rather prominent eyes, the mandibles smaller and with fewer strigæ; antennæ similar; prothorax barely a fifth wider than long, the sides more finely reflexed, more parallel and broadly, sub-evenly arcuate to behind the middle, then more rounding and converging to the rather more abrupt sinus, the short part thence to the base slightly converging to the somewhat rounded angles; transverse impressions feeble though rather evident, the apical incised line fine, much nearer the margin and broadly interrupted medially; median stria deep, greatly biabbreviated; rugulæ fine and remote; foveæ linear, deeply impressed, the outer ridge not well defined and less than half as long as the linear inner part, the intervening surface very smooth and not deeply concave; elytra oval, nearly three-fourths longer than wide, only a fourth wider than the prothorax, the sinus very feeble; striæ moderately coarse and deeply impressed, with strong punctures, obsolescent apically, the seventh feeble, the scutellar wanting; intervals broadly and moderately convex, the

single puncture on the third coarse, near or adjoining the second stria near three-fifths; anterior male tarsi very obscure rufous, well dilated. Length (σ^7) 15.3 mm.; width 5.4 mm. North Carolina (Southern Pines),—Manee.....**pinorum** n. sp.

- 10—Body moderately narrow, feebly ventricose, convex, deep black and highly polished throughout in the male, the legs rufous distally; head slightly more than half as wide as the prothorax, with moderate but prominent eyes, the anterior sulci narrow, deep and slightly diverging, the mandibles rather small; palpi rufous, the last joint barely shorter than the third, elongate-oval, with rather narrowly truncate apex; antennæ somewhat longer than the head and prothorax, the latter a fifth wider than long, widest near apical third, the sides finely reflexed, almost evenly arcuate from apex to the basal sinus and thence nearly parallel for a short distance to the right and well defined angles, the apical angles broadly rounded; apical incised line very fine, only visible laterally, the median stria finer than in any of the preceding and slightly biabbreviated; transverse impressions obsolete; rugulæ fine, remote and feeble; foveæ linear, deeply impressed, narrow along the bottom, the outer ridge wanting, the bottom moderately concave; impression near the foveæ rounded, smooth and distinct though very shallow; base sinuate, three-fifths as wide as the apex; elytra oblong-oval, three-fifths longer than wide, a fourth wider than the prothorax, rather rapidly narrowing behind, with long and obvious shallow sinus; striæ rather coarse and well impressed, strongly punctate, the sixth and seventh obsolescent basally, the punctures somewhat abruptly obsolete in nearly apical third; scutellar stria wanting; intervals moderately convex, the single puncture coarse, on the second stria just behind the middle; surface between the smooth eighth stria and the margin more widely declivo-replanate posteriorly than usual; ninth stria very fine and subobsolete, much further from the margin than from the eighth; anterior male tarsi rather more moderately dilated. Length (σ^7) 12.0 mm.; width 4.4 mm. Alabama (Allen),—Löding.....**alabamensis** n. sp.

Body narrower but rather more ventricose, smaller in size, deep black, the under surface and legs more or less piceo-rufous; upper surface highly polished, the elytra opaculate in the female; head and prothorax relatively much smaller than in the preceding; head fully three-fifths as wide as the prothorax, with prominent eyes, the anterior sulci narrow, nearly parallel; labrum rufous; mandibles small, the strigæ fine and feeble; palpi pale rufous, nearly as in the preceding; antennæ fully as long as the head and prothorax, a little longer (σ^7); prothorax in almost every respect as in *alabamensis*, though smaller in size and with the foveæ still more reduced in every way, the inner lineate part fine, the surface thence to the sides smooth, scarcely at all concave; sides behind the sinus very short, feebly converging to the more obtuse and less sharply marked angles; elytra oblong-oval, one-half longer than wide, two-fifths wider than the prothorax, the shallow subapical sinus distinct; striæ (σ^7) rather coarsely impressed and strongly punctate, the

punctures obsolete gradually toward apex and the intervals distinctly convex, or (♀) fine and not impressed and finely punctate, the punctures obsolete from slightly behind the middle and the intervals flat; scutellar stria wanting; dorsal puncture coarse, adjoining the second stria just behind the middle; lateral parts of the elytra nearly as in the preceding, the declivous part often rufescent; outer striæ obsolescent basally; anterior male tarsi much less dilated than in the preceding. Length (♂ ♀) 9.3–9.8 mm.; width 3.3–3.4 mm. Alabama (Mobile),—Löding.

lilliputicus n. sp.

The species *alabamensis* and *lilliputicus* constitute a very isolated group of this genus, peculiar apparently to its extreme southern range, and doubtless many more remain to be discovered. The species which I formerly identified as *fatuus* Lec., based entirely upon the female, proves from the male recently sent me by Mr. Dury, to be none other than *sodalis* Lec., which synonymy had already been published.

Percosia Zimm.

Of the described species of this genus I now have series of males and females of *latissima*, *obesa* and *extensa*, and, by juxtaposition, the specific differences are seen to be very distinctly marked; in *diffinis* Lec., the eyes are flatter, and in all four the stria intervals are very nearly flat; in *ventricosa*, from Long Island, the body is shorter and broader, with coarser striæ and slightly convex intervals, and, in the following, the latter become decidedly convex, conspicuously so posteriad:

Percosia sulcatula n. sp.—Rather smaller in size, convex, shining, black, the elytra slightly alutaceous in the female; under surface piceous-black, rufous at the abdominal tip, the legs rufous; head rufescent, somewhat longer than wide, scarcely half as wide as the prothorax, the neck scarcely at all constricted; eyes well developed but only very slightly convex; anterior impressions short, slightly diverging; mandibles short; palpi slender, pale, the last two joints equal; antennæ rufous, not quite as long as the head and prothorax, the latter three-sevenths wider than long, the sides sharply but not widely reflexed, parallel and nearly straight in basal half, rounding and converging anteriorly; oblique latero-basal ridge obtuse but high; basal impressed area densely punctured except medially; anterior transverse impression rather distinct, smooth, the stria deep, attaining base but not quite the apex; elytra short, a fourth longer than wide, a fifth or sixth wider than the prothorax, the sides feebly and very gradually converging basally, the subapical sinus short, distinct; striæ coarse, groove-like, feebly impressed, strongly so behind, very feebly and indefinitely punctulate, the

scutellar stria long, oblique; intervals broadly convex, strongly so on the declivity. Length (♀) 10.3 mm.; width 4.6 mm. Colorado (Mesa, Boulder Co.),—Foster. Communicated by Prof. Cockerell.

This species may be placed near *ventricosa*, but differs in the virtually unconstricted neck and almost flat eyes; from *diffinis* it differs in its more abbreviated form and convex strial intervals, also in the less clearly biimpressed lateral punctured pronotal area at base.

From material recently received from Mr. Wade, I note that *Amara fallax* Lec., extends entirely across the more northern parts of the subarctic regions, while the smaller *hesperia* occurs in California and Oregon, Nevada, Utah, southern Colorado and New Mexico, the contrasting series of 29 and 25 specimens demonstrate their validity as species.

Diplocheila Brullé

In Mem. Col., page 146, I gave a review of the species of this genus then known to me. Since that time several additional species have come to hand, among which I am glad to number Canadian examples of *laticollis* and *striatopunctata* of LeConte, as well as examples of *alternans* Csy., very kindly given me in exchange by the Dominion Entomologist, Dr. C. Gordon Hewitt, from series discovered among the material shown me while on a recent visit to Ottawa. There is also among these recently acquired species, one belonging to the *obtusa* group of LeConte, distinguished by the rounded thoracic angles and absence of dorsal elytral puncture, but differing from *obtusa* in having scarcely a vestige of transverse pronotal impressions, said to be unusually distinct in that species. I have restored the original spelling of the generic name, overlooked in my former revision of the species. The new forms may be described as follows:

Diplocheila procera n. sp.—Elongate-suboval, moderately convex and shining throughout above, black, the legs and tarsi black; head rather large, somewhat longer than wide, four-sevenths as wide as the prothorax, with prominent eyes, the anterior impressions large and within a broad declivous depressed area; epistoma rather narrowly and deeply sinuate at tip, the suture distinct, transverse, finer and oblique at the sides; labrum with the lobes coarsely setose at tip, the right lobe larger and longer than the left; mandibles thick; palpi long and slender, the last joint evidently shorter than the third; antennæ slender, ferruginous,

blackish basally, extending well behind the thoracic base; prothorax longer than usual, scarcely more than a third wider than long; sides finely reflexed, gradually rounding anteriorly, straight and just visibly converging in about basal half; base broadly sinuate medially, much wider than the apex; apical angles narrowly rounded, the basal slightly more than right, sharply defined, not blunt; anterior impression visible as a large foveiform depression on the median line, the posterior very feeble, the median stria fine, broadly impressed, greatly biabbreviated; foveæ slightly elongate, distant from the base, broadly impressed, lying within outer fourth; surface with some remote rugulæ; scutellum equilatero-triangular, with straight sides; elytra oblong, with parallel and broadly arcuate sides and obtusely rounded apex, the apices oblique and straight, not sinuate, one-half longer than wide, two-fifths wider than the prothorax; striae incised, feebly subpunctulate, finer and feebler externally, the seventh subobsolete, the scutellar stria obsolete, the puncture small but distinct. Length (♀) 18.5 mm.; width 7.65 mm. Lake Superior.

Belongs in the neighborhood of *expansa* and *major*, differing from the former in the stronger anterior cephalic foveæ but less pronounced large anterior depression, in which the foveæ are individually undefined in *expansa*, also in the narrower and much less transverse prothorax and much narrower general form of the body. From *major* it differs in the more obsolete seventh elytral stria, narrower and more elongate prothorax and rather more unequal and more setose lobes of the labrum, also in the relatively larger head and slightly narrower bodily form.

Diplocheila foveata n. sp.—Dilated and rather convex, the lustre as in others of the genus, deep black; head three-fifths as wide as the prothorax, with moderate but prominent eyes, feeble and indefinite anterior impressions and deep epistomal line; labrum acutely and deeply, angularly emarginate, the left lobe sharply triangular, much broader than the right lobe and just visibly shorter; antennæ slender, fuscous, the first three joints black; last palpal joint elongate-oval, evidently shorter than the third; right mandible sinuato-truncate; prothorax one-half wider than long; base nearly as in the preceding, much wider than the apex; sides broadly, evenly arcuate, gradually becoming straight and parallel basally, the basal angles right, not rounded; transverse impressions subobsolete, the foveæ very short, deep, almost punctiform, at the bottom of a large shallow depression; stria fine; elytra rather short and broad, not quite one-half longer than wide, about a third wider than the prothorax, the sides rounding at base to the thoracic angles; striae moderate, finely subpunctate laterally, the seventh rather deep but more broadly impressed than the others; intervals scarcely more than flat, the alternate ones somewhat elevated medially toward tip, the scutellar obsolete. Length (♀) 14.5 mm.; width 6.0 mm. New York (Lake Champlain).

To be known very readily by the short and scarcely linear pronotal foveæ, and differing from *laticollis* in its relatively shorter and broader elytra, with broad and deeper seventh stria. From *striatopunctata* it differs in the short pronotal foveæ, less coarse and deep and much less punctate elytral striæ and relatively larger prothorax. *Cliens* Csy., is a species of the *laticollis* group, but differs from the others in the longer third palpal joint, this being almost one-half longer than the fourth, in the more convex elytra, more deeply declivous at the sides, in the deeper and perfectly smooth striæ and in the notably larger though not so convex eyes. *Planulata*, also coming in near *laticollis*, differs in the flattened dorsal surface of the elytra, gradually laterally and apically obsolete punctureless striæ, less deeply incised labrum and in having the prothorax widest behind the middle, the basal angles sharp but much more than right. Of *laticollis* Lec., I have a specimen from Ottawa and another from Riverside, Illinois; it is easily to be known by the relatively shorter and broader prothorax, much less notably narrower than the elytra than in the *striatopunctata* group and very nearly twice as wide as long, the elytra rather elongate, with almost smooth striæ, not coarser and strongly punctate as they are in *striatopunctata*, which represents a group having the prothorax relatively smaller than usual. I do not seem to have run across *impressicollis* Dej.; it certainly is not the same as *striatopunctata* Lec. Mr. Blatchley has recently (Col. Indiana) placed *alternans* Csy., as a variety of *impressicollis*; it has no such relationship, being larger, as well as differing in elytral coloration; *impressicollis* is only 12 to 14 mm. in length.

In this genus the head in the female is larger than in the male, as may be noted in many species of *Harpalus*, *Anisodactylus* and in some other genera; this sexual difference in the size of the head, probably denoting relatively greater feminine efficiency in this part of animated nature, is very conspicuous in *striatopunctata*.

Diplocheila amplipennis n. sp.—Form rather broadly suboval, the head and prothorax relatively small when compared with the elytra, black, moderately shining, with the usual minute surface sculpture; head moderate, three-fifths as wide as the prothorax, the eyes rather prominent; anterior declivous depression distinct but with the foveæ rather indefinite; epistomal sinus flatly beaded; labral lobes setose at tip, the right nearly twice as long as the left and much more narrowly

rounded; palpi slender, black, the last joint slightly shorter than the third; mandibles rugosely punctate distally; antennæ slender; prothorax relatively small, two-thirds wider than long, the sides parallel, broadly rounded and more converging anteriorly, feebly converging and straight in about basal half, finely reflexed basally, more coarsely anteriorly; basal angles obtuse and slightly blunt; base evidently wider than the apex, transverse, oblique at the sides; surface with some distant rugulæ, the impressions very feeble, the stria distinct, attaining base but not apex; foveæ short, linear, impressed, distant from the base and at outer fourth; elytra large, oblong, with parallel and broadly arcuate sides, one-half longer than wide and nearly one-half wider than the prothorax; striæ rather fine, deeply incised, feebly punctulate, the seventh deep and more punctate; intervals feebly convex. Length (♀) 16.5 mm.; width 7.2 mm. Lake Superior.

May be placed near *striatopunctata*, but it is larger, much broader and with finer and virtually impunctate striæ; the labrum has much more unequal lobes than in that species.

Diplocheila brevicollis n. sp.—Form narrowly-suboval, rather convex, moderately shining, black; head rather small, with very prominent eyes, four-sevenths as wide as the prothorax, the anterior declivity feebly marked, the foveæ small, rather deep and well defined; epistomal sinus rather deep, parabolic, the beading fine medially, broader laterally; labral lobes very unequal, the right lobe long, narrow at tip; mandibles very short; palpi slender, black, with pale tips, the last joint barely at all shorter than the third; antennæ about as long as the head and prothorax, the latter short, three-fifths wider than long, the sides moderately and almost evenly arcuate and finely reflexed from apex to base, a little more converging apically; basal angles obtuse and slightly rounded; base evidently wider than the apex, transverse, oblique at the sides; anterior transverse impression very feeble, the posterior obsolete, the stria deep, somewhat impressed, not quite attaining base or apex; foveæ linear, rather long, at half their length from the base and at outer fourth; elytra elongate-suboval, narrowed arcuately and unusually gradually behind, three-fifths longer than wide, almost one-half wider than the prothorax; striæ rather fine but sharply incised, a most equally deep throughout the width and finely lineato-punctate, the intervals feebly convex; dorsal puncture small, at the middle and at inner third of the third interval; anterior male tarsi distinctly dilated, black. Length (♂) 12.8 mm.; width 5.4 mm. New York (Ogdensburg).

This species is allied to *striatopunctata* but differs in its narrower form, shorter prothorax, shorter mandibles, more prominent eyes and more finely punctured striæ; the three dilated joints of the anterior male tarsi decrease but slightly in width, while in *striatopunctata* they diminish rapidly.

Diplocheila modesta n. sp.—Smaller, moderately convex and shining, black; head three-fifths as wide as the prothorax, with moderate but

notably prominent eyes and feebly concave anterior impressions, the labrum rather more symmetrically incised than usual; mandibles small (♂), larger (♀); antennæ not as long as the head and prothorax piceous, blacker basally; last palpal joint slender, cylindric, slightly shorter than the third, rather more distinctly shorter in the female; prothorax one-half wider than long to somewhat more; base much wider than the apex, transverse medially, feebly oblique thence to the slightly obtuse but sharp angles; sides broadly, subevenly rounded, scarcely straighter basally, very finely reflexed; anterior impression barely traceable, the posterior wholly obsolete, the median stria fine but rather deep, almost entire; foveæ deep, linear, extended to the basal margin by shallower impression; elytra oblong, parallel, obtusely ogivally rounded at tip, one-half longer than wide, fully two-fifths wider than the prothorax, the sides more rounding basally to the thoracic angles; striæ rather deep, sharply defined, very obsoletely micro-punctulate at the bottom, the seventh about as distinct as the others; intervals obviously convex (♂), virtually flat (♀), the puncture a little behind the middle as in *foveata*. Length (♀) 13.5 mm.; width 5.2 mm. Canada (Montreal).

This species resembles *laticollis* somewhat but is smaller, with relatively narrower, basally somewhat narrowed prothorax, slightly longer third palpal joint and distinct seventh elytral stria; it is much smaller and narrower than *foveata*, besides differing in several other structural characters. In size and general characters it resembles *impressicollis* Dej., but differs apparently in its obsolete transverse pronotal impressions and still more indistinct stria punctures of the elytra, with more convex intervals.

Diplocheila parallela n. sp.—Parallel, rather more convex and with more polished lustre than in the other species, deep black, the legs black; head more rounded, four-sevenths as wide as the prothorax, the eyes moderate and only very moderately convex; anterior impressions very small and feeble; labrum symmetric, moderately emarginate; mandibles unusually small; fourth palpal joint truncate at tip, barely shorter than the third; antennæ black, slender, nearly as long as the head and prothorax, the latter not quite one-half wider than long, the sides evenly arcuate from apex to the obtuse and narrowly rounded basal angles, very finely, equally reflexed; base distinctly wider than the somewhat deeply sinuate apex; the apical angles broadly rounded, the transverse impressions both obsolete, the stria fine; foveæ linear, deep, extending almost to the basal margin; elytra three-fifths longer than wide, only a fourth or fifth wider than the prothorax, oblong, evenly rounded at apex, the sides narrowly reflexed, only a little more arcuate basally, the sinuate basal margin extending from the first stria to the acute humeral angulation; striæ moderate, rather deep and sharply defined, virtually smooth, the sixth feeble, the seventh, almost completely obsolete; sutural stria a very short oblique fine line; intervals flat externally,

nearly so sutural; dorsal puncture completely wanting; tarsi slender, deep black. Length (♀) 10.0 mm.; width 4.0 mm. Illinois (Homer).

The only species with which this can be compared is *obtusa* Lec., said to be from the vicinity of Long's Peak, in the Rocky Mts., but *obtusa* is a slightly larger species, 11 mm. in length, having the transverse pronotal impressions distinct, the anterior angulate, the posterior transverse, the foveæ apparently somewhat shorter, the scutellar stria wanting and the sides of the prothorax seemingly more rounded before the middle; here, if anything, they are rather more rounded just behind the middle than elsewhere. *Parallela* is, however, rather closely allied to *obtusa*, and the two constitute a remarkably isolated group of the genus.

Dicælus Bon.

I have recently received from Mr. Manee two specimens which may represent the Georgian *planicollis* of LeConte; it is still stouter and more opaque than *carolinensis*, with less irregular pronotum, the indentation made upon the sublateral obtuse ridge by the internal lateral channel being obsolete; this is always very evident in the latter species, which seems to be much the more abundant of the two in the vicinity of Southern Pines. The following belongs to the *elongatus* group of the genus:

Dicælus ashevillensis n. sp.—Form narrow, elongate and with the upper surface almost flat, black, opaculate throughout above; hypomera and epipleura polished, the rest of the under surface rather alutaceous; epipleura concave and having one or two rows of small feeble punctures; legs deep black, with blackish setæ, the soles of the anterior male tarsi clothed with bright fulvous and whiter scales; head moderate, nearly four-sevenths as wide as the prothorax, the eyes moderate but convex and prominent; anterior impressions deep and punctiform; labrum evenly, shallowly and angularly emarginate, the median furrow distinct; mandibles small; antennæ slender, black, gradually bright ferruginous distally; prothorax as long as wide, parallel and nearly straight at the sides to beyond the middle, gradually arcuately narrowed thence to the deeply sinuate apex, which is very much narrower than the base, the basal sinus pronounced, with transverse bottom; surface with minute rugulosity and fine transverse lines, the stria deep, almost entire; at each side of the median line behind the middle there is a fine linear impression, slightly oblique and well defined, and, exterior to the lines, a long feeble obtuse ridge; sides broadly concave and having three setigerous punctures; elytra three-fourths longer than wide, just visibly wider than the prothorax, evenly ogivally rounded behind; lateral ridge from the humeri very acutely elevated, disappearing near apical

fourth; striae deep, smooth, the intervals subequal, moderately convex. Length (σ^7) 15.0 mm.; width 5.3 mm. North Carolina (Asheville). A single example, taken by the writer.

This species has the elytral intervals much less unequally elevated than in *elongatus* or *simplex*, resembling *debiliceps* more in this respect. The body is less elongate and smaller than in the first two named and has a slightly larger head, with much more prominent eyes than the last; it has the sides of the prothorax parallel for a longer distance anteriorly than in any of the three, and the fine oblique pronotal lines are more shallowly impressed.

The four species of the *elongatus* group can be distinguished easily among themselves as follows:

Elytra narrowing posteriorly from well behind the middle.

Last abdominal segment (φ) evenly rounded from side to side.

elongatus Bon.

Last segment arcuately subtruncate; head smaller in size.

debiliceps Csy.

Elytra narrowing posteriorly from the middle and less elongate.

Prothorax narrowing anteriorly from behind the middle.

simplex Dej.

Prothorax narrowing from before the middle; body narrower, the head smaller, with smaller but more prominent eyes.

ashevillensis Csy.

Badister Clairv.

The species described by LeConte from Georgia as *Badister micans* (Proc. Acad. Phila., 1844, p. 52) is probably not a *Badister*, for its dimensions are given as 9 by 3.75 mm. ($4\frac{1}{2}$ by $1\frac{7}{8}$ l.). The prothorax is described as flat, black, margined with brown, the sides sinuate near the posterior angles; elytra iridescent, not sinuate apically, the striae rather deep, with flat intervals, the third with two punctures. The antennae are brown, with the two basal joints paler. In the subsequent remarks the author intimates that it differs much in general appearance from the other species and may perhaps be generically different. The *Badister micans* next described by the author (Ann. Lyceum N. Y., IV, 1846, p. 318) is a very different species, 6 by 1.8 mm. in dimensions, with the thoracic angles obtuse and somewhat rounded. What the original *micans* can be I have no means of knowing, and, although it may be permissible to shift the type label to a species allied to the original type and not differing materially from the characters

assigned to it, I do not think so radical a change as that indicated can be allowed, and the species *Badister micans*, commonly so called, must therefore be regarded as undescribed.

The species of *Badister* seem to be numerous in North America, though generally rare individually. Those at present in my collection may be known as follows:

- Elytral striæ deep, smooth, the intervals narrow and convex; species very small in size. 2
- Elytral striæ less deep, the intervals feebly convex. 4
- 2—Head smaller, not quite as wide as an elytron, the eyes smaller and very prominent. Body narrower, convex and shining, black, with pale legs, the elytra piceous, testaceous in nearly basal half, except near the suture, which is narrowly testaceous throughout; head three-fourths as wide as the prothorax, convex, smooth, the anterior impressions minute and very feeble; last palpal joint much longer than the third; antennæ pale, two-thirds as long as the body, the medial joints between two and three times as long as wide; prothorax convex, a fourth wider than long, widest at apical third, where the sides are rather strongly rounded, oblique and straight basally, the angles obtuse and slightly blunt; anterior impression near the sinuato-truncate apex and distinct, the posterior obsolete, the stria rather coarse and deep, not quite entire; foveæ coarse, deep, elongate; sides very finely reflexed, abruptly a little more so at base, which is somewhat wider than the apex; elytra three-fifths longer than wide, not quite one-half wider than the prothorax, elongate-oval, convex, the striæ deep, relatively coarse, the intervals flatter behind; dorsal punctures two, small and feeble, adhering externally to the second stria; apex evenly and obtusely rounded. Length (♂) 3.5 mm.; width 1.25 mm. Illinois. . . . *angustus* n. sp.
- Head larger, slightly wider than an elytron, the eyes relatively larger but not quite so prominent; coloration almost similar, the suture not definitely paler and the antero-external rufous areas even more nubilous; antennæ clearer testaceous basally. 3
- 3—Antennæ shorter, rather more compressed, three-fifths as long as the body, the medial joints barely twice as long as wide; body narrower, polished, strongly convex; head very smooth, convex, becoming deplanate at the sides apically; fourth palpal joint subinflated and wider and much longer than the third, gradually acutely pointed; prothorax nearly a third wider than long, in form and structure nearly as in the preceding, but with the posterior transverse impression visible, the foveæ less elongate, narrower and deeper, the sides basally more reflexed; base much narrower, not as wide as the sinuato-truncate apex; elytra four-sevenths longer than wide, only a third wider than the prothorax, nearly as in *angustus* but still more obtusely rounded at apex. Length (♀) 3.7 mm.; width 1.3 mm. New York (Long Island),—Shoemaker. . . . *gilvipes* n. sp.
- Antennæ in both sexes much longer and relatively more slender, nearly three-fourths as long as the body, the medial joints nearly three

- times as long as wide in both male and female; body a little larger notably stouter; head still larger, though otherwise nearly as in *gilvipes*, fully four-fifths as wide as the prothorax; last palpal joint very much longer than the third and thicker, acutely pointed; prothorax less transverse, a fourth or fifth wider than long, throughout nearly as in *gilvipes*, except that the apical angles are less obtuse and the base and apex more nearly equal; elytra two-fifths (σ^7) to one-half (φ) longer than wide, nearly one-half wider than the prothorax, very obtusely rounded behind, the structure nearly as in *gilvipes*, and, as in others of this group, very finely reflexed at the sides; hind tarsi slender, as long as the tibiae. Length (σ^7 φ) 3.8–4.0 mm.; width 1.45 mm. New York and District of Columbia to Illinois. Five specimens. [*B. terminalis* Lec.]...**notatus** Hald.
- 4—Elytra uniform in coloration or virtually so.....5
Elytra pale, variegated with sharply defined black areas and spots...11
- 5—Prothorax moderately transverse, strongly narrowed behind, the base narrower than the apex; antennae clear and pure flavo-feruginous throughout. Form oblong, moderately convex, shining, black, the lateral edges finely paler from diaphaneity; under surface black, the epipleura obscure testaceous; legs very pale flavate; head large, shorter than wide, four-fifths as wide as the prothorax, convex, broadly concave and duller at the sides of the very broad apex; fourth palpal joint much longer than the third, gradually paler apically; eyes notably large, convex though only moderately prominent; antennae almost three-fourths as long as the body, very slender, filiform and not distinctly compressed as they are in the preceding group, the medial joints four times as long as wide; prothorax a third wider than long, widest and laterally rounded at apical third, the sides thence oblique and straight posteriorly, the angles very obtuse, with slightly blunt tips, the apical angles rather sharply defined and subprominent; apex broad, rather deeply and evenly sinuate, much wider than the base, which is transverse medially and obliquely arcuate laterad; surface feebly convex, the transverse impressions shallow but evident; striae finely impressed between them; foveae elongate, narrow, deeply impressed in basal third; sides finely reflexed, more broadly at base; elytra parallel, rapidly very obtuse at apex, three-fifths longer than wide, about one-half wider than the prothorax, the sides very finely reflexed, rapidly rounding at base; surface with feeble iridescent lustre; striae fine, impressed, smooth, the intervals very slightly convex, the two punctures along the outside of the second stria very fine; hind tarsi much shorter than the tibiae. Length (φ) 5.6 mm.; width 2.0 mm. Iowa (Cedar Rapids),—Brendel...**flavicornis** n. sp.
- Prothorax strongly transverse, very moderately narrowed behind, the base as wide as the apex; antennae always dark in color.....6
- 6—Head very large, distinctly wider than an elytron.....7
Head smaller, always narrower than an elytron.....9
- 7—Sides of the prothorax feebly reflexed. Body rather larger in size, feebly convex and shining, obscure testaceous, the prothorax and elytral suture paler, the head black; elytra barely visibly iridescent:

head four-fifths (♂) to five-sixths (♀) as wide as the prothorax, the broad apex alutaceous, with elevated sides; eyes well developed, prominent; mandibles stout; antennæ very slender, blackish, paler distally, the basal joint pale; medial joints four times (♂) to three times (♀) as long as wide; prothorax two-thirds wider than long, widest just before the middle, the sides oblique, straight and thickened basally, the angles obtuse but not rounded; foveæ large, shallow, impressed, the median stria fine; base beaded, obliquely rounded laterally; apex broadly, evenly sinuate; elytra oblong, very obtusely rounded at tip, one-half longer than wide, two-fifths wider than the prothorax; striæ fine, the intervals nearly flat, the two punctures very distinct. Length (♂ ♀) 6.0-6.25 mm.; width 2.2-2.25 mm. California (San Joaquin Co.)**ferrugineus** Dej.

Sides of the prothorax strongly reflexed, broadly so basally; color much darker. 8

8—Form oblong, moderately convex, shining, black, the lateral edges finely paler, the elytra strongly iridescent; head very large, five-sixths as wide as the prothorax, shorter than wide, with large and rather prominent eyes and strong, very curved mandibles, the sides of the broad epistoma elevated; antennæ (♀) very slender and filiform, slightly over one-half as long as the body, black, gradually paler distally, the basal joint pale only basally, the medial joints fully four times as long as wide; prothorax transverse, three-fourths wider than long, widest near anterior third but with the sides evenly rounded, becoming more oblique and nearly straight basally, the angles very obtuse, somewhat blunt; surface with some transverse, ruguliform lines, the stria fine, impressed, subentire; foveæ broadly concave, with linear bottom; base not beaded, somewhat narrower than the sinuate apex, the apical angles blunt; elytra three-fifths longer than wide, scarcely a third wider than the prothorax, very obtuse at apex; striæ smooth, fine, the intervals broadly convex, the two punctures distinct, just before the middle and near apical fourth; legs and epipleura obscure testaceous. Length (♀) 5.3 mm.; width 1.9 mm. District of Columbia**grandiceps** n. sp.

Form less parallel, the anterior parts relatively not so large, moderately convex, shining, piceous, the head blacker, large, four-fifths as wide as the prothorax, with rather large prominent eyes; surface alutaceous and unusually sloping anteriorly, with the usual elevated sides, the apex sinuate; mandibles moderate, with equally truncate apex; antennæ piceous, very slender, the medial joints not quite four times as long as wide, the first joint fuscous, nubilously paler basally; prothorax not so large as in *grandiceps* but otherwise similar, except that the sides are rather more strongly rounded anteriorly, becoming straight in fully basal half; foveæ broadly concave, with the short lineate bottom finer, shorter and more definite than in the preceding and slightly oblique; elytra shorter, scarcely one-half longer than wide and about one-half wider than the prothorax, feebly iridescent; striæ in the preceding, the intervals slightly flatter; tarsi shorter, the posterior much more distinctly

shorter than the tibiæ; under surface piceous, the epipleura obscure, the legs bright, flavate. Length (♀) 5.5 mm.; width 2.0 mm. Illinois. A single example as in the preceding. **ocularis** n. sp.

- 9—Body deep black in color, the edges not paler, the thoracic sides only very slightly oblique posteriorly. Lustre alutaceous, the elytra shining though not or only very faintly iridescent; under surface black, the epipleura piceous, the legs dark rufous; head scarcely three-fourths as wide as the prothorax, with moderate and not very prominent eyes, the feebly sloping epistoma truncate, with finely elevated sides; antennæ not so slender as in the preceding but more than half as long as the body, black, gradually ferruginous distally, the two basal joints piceous; prothorax three-fifths wider than long, the sides feebly arcuate, less so basally, the angles very obtuse, blunt at tip; apex only moderately sinuate, with broadly blunt angles; margins slightly thickened basally; base and apex margined; surface rather flat, the stria fine, the transverse impressions very feeble; foveæ elongate, feebly impressed; elytra one-half longer than wide, two-fifths wider than the prothorax, very obtuse at apex; striæ fine, the intervals feebly convex; hind tarsi as long as the tibiæ, the anterior strongly dilated in the male. Length (♂) 5.5 mm.; width 2.0 mm. California (Sebastopol, Sonoma Co.). A single example. **anthracinus** Lec.

Body not deep black, the edges often a little paler; thoracic sides strongly reflexed, more oblique posteriorly. 10

- 10—Color piceous, the head blacker; surface shining, distinctly though moderately convex, the elytra iridescent; legs flavate; head three-fourths as wide as the prothorax, with rather large and prominent eyes; surface slightly declivous anteriorly, feebly concave at each side of the epistoma, the apex evenly and feebly sinuate; palpi long and very slender, the fourth joint only slightly longer than the third and but little thicker; antennæ slender, piceous, the medial joints not quite four times as long as wide; prothorax short, fully three-fourths wider than long, the sides rounded, oblique and straight behind the middle, narrowly reflexed apically, gradually becoming broadly so at base, the angles very obtuse, slightly blunt at tip; apex and the base laterally finely margined, the latter very oblique and arcuate laterally; apex sinuate, with distinct but blunt angles and equal in width to the base; transverse impressions distinct though not deep, the stria visible only between them and fine; foveæ moderate, elongate, shallowly impressed, not attaining the base; elytra four-sevenths longer than wide, two-fifths wider than the prothorax, very obtuse and each rectilinear at apex; striæ not very fine, smooth, deeply impressed; intervals evidently convex; posterior puncture at apical fifth or sixth; hind tarsi slender, distinctly shorter than the tibiæ. Length (♀) 5.6 mm.; width 2.2 mm. A single example from the Levette collection, probably taken in Indiana. **transversus** n. sp.

Color obscure testaceous, with the head blacker, the legs flavate; elytral suture generally finely paler; size much smaller; surface moderately convex, shining, the elytra barely visibly iridescent; head relatively

larger, four-fifths as wide as the prothorax, with large and prominent eyes; surface declivous and alutaceous anteriorly; antennæ slender, fuscous, the medial joints between three and four times as long as wide; prothorax relatively much smaller than in *transversus*, three-fourths wider than long; general outline and surface similar, except that the side margins are more reflexed anteriorly and still more widely so basally, and that the foveæ are deeper, more acutely linear at the bottom and attain the basal margin; elytra one-half longer than wide and fully one-half wider than the prothorax, the striæ finer and less impressed, the intervals flatter though sensibly convex; posterior puncture much less apical, at or before posterior fourth; apex similarly obtuse. Length (♂ ♀) 4.2–4.5 mm.; width 1.6–1.7 mm. Illinois.....**reflexus** Lec.

- 11—Form elongate-subparallel, rather convex, shining, pale rufo-flavate in color, the head, entire hind body beneath, a large quadrate spot not quite attaining the margin or suture and an apical area on each elytron, deep black; legs pale flavate; elytra wholly devoid of iridescence; head barely wider than an elytron, more than three-fourths as wide as the prothorax, with large prominent eyes; epistoma feebly concave at each side, the apex broadly sinuate; palpi with the fourth joint much longer and thicker than the third; antennæ very slender, black, the first joint testaceous with nubilously black apex; prothorax one-half wider than long, the sides finely reflexed, rounded, gradually oblique and straight in nearly basal half, only little more reflexed basally, the angles very obtuse, scarcely blunt; base evidently narrower than the apex, the transverse impressions just traceable, the foveæ oval, moderately impressed, not attaining the base; elytra fully three-fourths longer than wide, one-half wider than the prothorax, rather wider behind the middle than at base, obtusely rounded at apex; striæ fine, smooth, rather abrupt, the intervals almost flat, the posterior puncture near apical fifth. Length (♀) 5.5–6.0 mm.; width 1.9–2.2 mm. Indiana,—Levette. Five examples.....**pulchellus** Lec.

Of the species which I have not seen, *obtusus* Lec., from Lake Superior, has broadly rounded basal thoracic angles; *flavipes*, of the southern Atlantic regions, also has these angles rounded; *micans* is alluded to in the introductory remarks; *bipustulatus* Fab., is a European species said to occur in Vancouver Island, but probably not correctly identified; *maculatus* Lec., from Pennsylvania, is marked somewhat as in *pulchellus*, but has a black prothorax, and *elegans* Lec., of Texas, seems to resemble *maculatus*, the elytral spots confluent from the fourth to ninth stria, but does not have the thoracic sides more broadly reflexed basally and is somewhat smaller in size. The species described by Mr. Blatchley from Indiana, under the name *laticeps*, is evidently allied to *flavicornis*, but is somewhat larger; the head is said to be as wide as

the prothorax, the flavate antennæ with the apical half gradually dusky and the median thoracic stria entire; nothing is said as to elytral iridescence. In *flavicornis* the antennæ are very pale and equally flavate throughout the length, the head very distinctly narrower than the prothorax, even in the female, the difference undoubtedly still more notable in the male, for, as in *Diplocheila*, the head is a little larger in the female than in the male; in *flavicornis* the median thoracic stria is not entire, extending only between the feeble transverse impressions, and the elytral surface is distinctly iridescent. In his original description of *pulchellus*—from Evansville, Indiana—LeConte states that the middle black spot of each elytron is marginal, and that the antennæ are “obscuræ, articulis 3 pallidis”; I fail entirely to comprehend the description of the antennæ, and, in all my specimens, the middle elytral spot is equally and narrowly separated from the sides and suture.

Calathus Bon.

In Memoirs IV, 1913, page 159, I briefly referred to the species of the Pacific coastal regions, basing the remarks upon rough determinations of species in my collection, identified by comparison with the material of the Horn and LeConte collections, but find on more careful study that these identifications were in some cases erroneous. *Behrensi*, for example, is the notably stout subparallel form, with red prothorax, found abundantly about San Francisco; it was said by Mannerheim to occur at Fort Ross, in Sonoma Co., and had been previously described by Dejean under the name *ruficollis*; *quadricollis* of LeConte is a very much narrower species. The true *obscurus*, from an unrecorded locality in southern California, and represented by a single female said to be 10 mm. in length, does not seem to be in my collection at present, although *longulus* may be closely allied. Finally, the specimen from Guadalupe Island, which I there referred to *quadricollis*, proves to be a different thing and is described below under the name *insularis*. My Alaskan material does not include *ingratus* Dej., or *incommodus* Mann., but there are several undescribed species, smaller in size, which were said to have been taken on St. Paul Island, and, although personally I have no reason to doubt this locality, Mr. Wm. T. Davis informs me that some Hemipterids received by him from the

same collector, were in his opinion taken on the mainland and not on St. Paul Island. At any rate, the species of *Calathus*, three in number, said to be from St. Paul Island, are apparently hitherto undescribed. The species of the Pacific coast known to me thus far may be described as follows:

Species of California, larger and stouter in build.....2
 Species of Alaska and neighboring islands, notably smaller and narrower.....12

2—Third antennal joint much longer than the fourth.....3

Third antennal joint not or but very slightly longer than the fourth...4

3—Elytra without trace of a subbasal puncture near the scutellum; last palpal joint slender as usual, but with the tip transversely truncate. Body elongate-suboval, moderately convex, shining, the elytra opaculate; color pure bright testaceous, the elytra piceous-black, with the reflexed edge testaceous; head oval, with moderately convex eyes, not three-fifths as wide as the prothorax; antennæ not very slender, three-fifths as long as the elytra; prothorax a fifth wider than long, the deeply sinuate apex scarcely three-fourths as wide as the base; sides feebly arcuate; basal angles right, slightly blunt; surface nearly smooth, the anterior impression distinct, the posterior obsolete; sides rather strongly and abruptly reflexed, becoming broadly declivo-explanate basally; elytra more than one-half longer than wide, nearly a third wider than the prothorax, the sides evenly and moderately arcuate to the base; apex evenly and gradually ogival; striæ very fine, the intervals just visibly convex; dorsal punctures very fine, four in number. Length (♀) 9.5 mm.; width 3.9 mm. California (Mokelumne Hill, Calaveras Co.),—Blaisdell.....*ignicollis* n. sp.

Elytra with a small subscutellar puncture, not quite at the base; last palpal joint rather inflated, elongate-oval. Body less elongate and with notably inflated elytra, obscure rufous, the legs more flavate; elytra black, with dull rufous reflexed margins; surface alutaceous, the elytra opaque, the head nearly as in the preceding; antennæ slender, two-thirds as long as the elytra; prothorax subsimilar in form and structure but relatively not quite so large and with notably rounded basal angles, the apical not so prominent and more obtusely rounded at tip; anterior transverse impression completely obsolete; sides similarly reflexed and basally explanate; elytra shorter, rather less than one-half longer than wide, two-fifths wider than the prothorax, the sides slightly more arcuate; striæ very fine, the intervals flat; dorsal punctures small, four in number. Length (♀) 8.7 mm.; width 3.65 mm. California (Monterey).....*montereyanus* n. sp.

4—Body very much larger than in any other American species of the genus. Form stout, oblong-oval, testaceous, the elytra blackish, with the usual testaceous reflexed margins; lustre moderately shining, the elytra opaculate in both sexes; surface very moderately convex; head subtriangular, longer than usual, more than half as wide as the prothorax, the palpi slender, with obtusely pointed apex;

antennæ very slender, long, fully half as long as the body; eyes large, moderately convex; prothorax a fourth wider than long; sides subevenly and feebly arcuate, narrowly reflexed anteriorly, broadly explanate basally, the basal angles slightly obtuse and rounded; apex sinuate, much narrower than the base; surface with feeble ruguliform transverse lines medially, the anterior impression barely traceable; elytra oblong-oval, rather more than one-half longer than wide, a third (♂) to two-fifths (♀) wider than the prothorax, gradually rounding posteriorly at the sides from before the middle, ogival at tip; striæ very fine, the intervals flat; sub-scutellar puncture distinct; dorsal punctures four; anterior male tarsi strongly dilated; met-episterna evidently though not greatly longer than wide. Length (♂ ♀) 11.0–12.0 mm.; width 4.5–4.9 mm. Guadalupe Island, off the coast of Lower California. Six specimens. *guadalupensis* Csy.

Body smaller, of the usual size characterizing the west coast species. . . 5

5—Antennæ filiform, the third and fourth joints much longer than the fifth. 6

Antennæ almost as filiform, but with joints three to five differing but little in length. 7

6—Body elongate-suboval, moderately convex, bright testaceous, the legs more flavate; elytra blackish-piceous; surface shining, the elytra opaculate; head scarcely at all longer than wide, slightly over half as wide as the prothorax, the eyes moderate, rather feebly convex; antennæ moderately slender, only a little longer than the head and prothorax; last palpal joint somewhat thicker than the third; prothorax rather large, fully a fourth wider than long, the sides subevenly and somewhat strongly arcuate to the narrowed and moderately sinuate apex having obtuse angles, a little less converging or arcuate basally, the angles slightly obtuse, narrowly rounded; surface more evenly convex than in the three preceding, the sides rather abruptly well reflexed, but becoming only slightly more broadly so basally, the transverse impressions subobsolete; elytra evenly oblong-oval, slightly over one-half longer than wide, scarcely a third wider than the prothorax; striæ extremely fine, less so on the declivity, the intervals perfectly flat throughout the length; dorsal punctures three to four; scutellar puncture distinct but small, remote from the scutellum and behind the base; female as usual with the last ventral strongly rounding and with a single puncture at each side as in the male. Length (♀) 9.0 mm.; width 3.8 mm. California (San Diego). A single example, taken by the writer.

tenuistriatus n. sp.

Body nearly similar in form and coloration but with the elytra piceous-brown, with paler suture and reflexed edge, and with its surface much more shining, scarcely less so than the pronotum; body in general very pale testaceous; head slightly more than half as wide as the prothorax, narrower and more elongate than in *tenuistriatus*, and with the eyes smaller and notably more prominent; antennæ very slender and longer, fully half as long as the body; prothorax smaller, more quadrate, only very little wider than long, the broadly

arcuate, feebly, anteriorly converging sides becoming more parallel and straighter posteriorly, the basal angles but little more than right and rather sharp, not even blunt at tip; anterior and posterior impressions both evident though feeble; sides narrowly but strongly reflexed, becoming gradually much broader and flat posteriorly; basal foveæ elongate and feebly impressed, much more evident than usual; elytra narrower and less convex than in the preceding, three-fifths longer than wide, about a third wider than the prothorax, of the usual outline; striae rather fine but much less so than in the preceding and less sharply defined, not deeper on the declivity; intervals flat, the subscutellar puncture similar; dorsal punctures four to five; anterior tarsi of the male rather moderately dilated, much less so than in *guadalupensis*. Length (♂) 8.8 mm.; width 3.35 mm. Guadalupe Island. *insularis* n. sp.

- 7—Prothorax large, nearly half as long as the elytra and scarcely narrower, with distinct and only narrowly blunt right basal angles; striae intervals feebly and confusedly punctate, less evidently in the female. Body subparallel, rather convex, bright testaceous, the elytra black, with pale reflexed margins; surface polished throughout (♂) or with the elytra very faintly alutaceous (♀); head four-sevenths as wide as the prothorax, barely longer than wide, with well developed convex eyes; antennae moderately slender, filiform, a little longer than the head and prothorax; last palpal joint distinctly longer than the third; prothorax but very slightly wider than long, the sides arcuately converging in apical, parallel and straight in basal, half; sides moderately reflexed, becoming broadly subdeplanate posteriorly only in the female; stria fine, biabbreviated, the transverse impressions obsolete, the foveæ barely traceable; elytra one-half longer than wide, gradually obtusely ogival behind the middle; striae only moderately fine, more deeply impressed internally and apically in the male; intervals (♂) just visibly convex or (♀) flat; dorsal punctures unusually distinct, two to three in number, the subscutellar puncture distinct; three basal joints of the anterior tarsi (♂) very distinctly dilated, the fourth abruptly very narrow. Length (♂ ♀) 7.5–8.5 mm.; width 3.2–3.4 mm. California (Hydesville, Valley of Eel River, Humboldt Co.). Three examples. *grandicollis* n. sp.

Prothorax relatively smaller, always distinctly narrower than the elytra and less than half as long, the basal angles evidently and sometimes rather broadly rounded; striae intervals not punctulate. 8

- 8—Color pale and bright rufo-testaceous, the elytra dark as usual. Body moderately narrow and elongate, the elytra but feebly dilated; lustre shining throughout (♂), or with the elytra more or less opaculate (♀); head scarcely longer than wide, very little more than half as wide as the prothorax; antennae moderately slender, somewhat attenuate distally, not quite half as long as the body; last palpal joint as long as the third and not thicker, obtusely pointed; prothorax only a fifth or sixth wider than long, and with the sides arcuate and converging apically, parallel basally, reflexed, becoming deplanate basally; foveæ feebly impressed; impressions obsolete,

the median stria fine; apical angles rather obtusely rounded at tip; elytra somewhat more than one-half longer than wide, fully a fourth wider than the prothorax; outline obtusely ogival behind the middle; striae fine, but little more impressed in the male, the intervals virtually flat; scutellar puncture distinct; dorsal punctures rather strong, about three in number; three basal joints of the anterior male tarsi rather strongly dilated. Length (σ^7 ♀) 8.0–9.3 mm.; width 3.1–3.6 mm. California (San Francisco to Sta. Barbara). Very abundant.....*quadricollis* Lec.

Color pale testaceous though somewhat duller, and with brownish-black elytra having the usual pale reflexed edges. Body larger, very much broader, subalutaceous, the elytra more opaque; head scarcely half as wide as the prothorax, but little longer than wide, the eyes well developed and rather prominent; antennae slender, much less than half as long as the body, the third joint somewhat evidently longer than the fourth as a rule; prothorax notably transverse, a third wider than long, the sides rounding anteriorly, straighter and subparallel basally, the angles rather broadly rounded; transverse impressions feeble but traceable, the foveae subobsolete; margins strongly reflexed, deplanate basally; elytra scarcely one-half longer than wide, a fourth wider than the prothorax, ogivally rounding behind; striae fine, deeper in the male, sometimes broken or sub-punctulate laterally; intervals feebly convex (σ^7), or perfectly flat (♀); subscutellar puncture distinct, the dorsal punctures three to four; anterior male tarsi with the first three joints rather strongly dilated. Length (σ^7 ♀) 8.2–10.0 mm.; width 3.6–4.2 mm. California (San Francisco). Moderately abundant. [*C. behrensi* Mann.].....*ruficollis* Dej.

Color blackish-piceous, the prothorax generally a little paler or obscurely rufescent.....9

9—Prothorax nearly as in the preceding, distinctly wider than long... 10

Prothorax very nearly as long as wide; body more elongate..... 11

10—Body moderately convex, rather small, narrower than in *quadricollis*, the elytra alutaceous in the male; head very evidently more than half as wide as the prothorax, the eyes well developed and somewhat prominent; last palpal joint somewhat longer than the third, slender but obtuse at tip; antennae very slender and filiform, half as long as the body; prothorax nearly a fourth wider than long, in outline and impressions almost as in the preceding, the apical angles even more obtusely rounded; elytra slightly over one-half longer than wide, a fourth to third wider than the prothorax, gradually obtusely ogival posteriorly; striae fine, coarser and deeper on the declivity; intervals flat to just visibly convex; dorsal punctures three; subscutellar puncture evident; anterior male tarsi moderately dilated. Length (σ^7) 6.8–8.0 mm.; width 2.8–3.0 mm. California (Sta. Clara Co.). Four specimens.....*minuens* n. sp.

Body stouter, more nearly as in *quadricollis*, but with the anterior parts relatively smaller and the hind body more inflated; elytra rather shining (σ^7), strongly alutaceous (♀); head small, elongate, scarcely more than half as wide as the prothorax; antennae rather slender,

evidently less than half as long as the body; palpi very slender, the last two joints equal in length; prothorax fully a fourth wider than long, in outline nearly as in *ruficollis* and with similarly rounded apical and basal angles, but with the sides rather less reflexed; foveæ vestigial, the median stria rather deep, biabbreviated; elytra more elongate, fully three-fifths longer than wide, gradually ogival with obtuse apex in about posterior half, less than a fourth wider than the prothorax; striæ moderately fine, abrupt, a little deeper behind; intervals not quite perfectly flat; subscutellar puncture distinct; dorsal punctures four; anterior male tarsi very moderately dilated. Length (1♂, 6♀) 7.5–8.2 mm.; width 3.2–3.6 mm. California (San Diego). Taken by Mr. Dunn and the writer.

piceolus n. sp.

- 11—Form elongate-suboval, moderately convex, alutaceous, the elytra opaque, with the reflexed margins not distinctly paler; legs dark rufous; head elongate, four-sevenths as wide as the prothorax, the eyes well developed but not very prominent; antennæ very slender, dark rufous; maxillary palpi with the last joint not quite as long as the third; prothorax barely at all wider than long, the sides broadly, subevenly arcuate, less so and subparallel basally; all the angles rounded; surface subeven, the stria short; sides deeply reflexed, broadly explanate posteriorly, the foveæ and impressions obsolete; elytra nearly two-thirds longer than wide, almost two-fifths wider than the prothorax, somewhat evenly elongate-oval, gradually pointed and ogival apically; striæ very fine, only slightly stronger apically, the intervals perfectly flat throughout, the subscutellar puncture distinct; dorsal punctures fine, two to three in number. Length (♀) 9.5 mm.; width 3.5 mm. California (Los Angeles Co.).....*longulus* Csy.

- 12—Elytral striæ deep, sharply defined and groove-like, the intervals throughout the length perfectly flat, micro-reticulate and minutely and feebly, confusedly subpunctulate. Body elongate, narrow, nearly parallel, polished and piceous-black, with diaphanously pale thoracic sides; elytra alutaceous, with the narrowly reflexed edges scarcely pale; head scarcely elongate, four-sevenths as wide as the prothorax, with large but very moderately convex eyes; antennæ slender, flavate, nearly half as long as the body; last palpal joint very gradually pointed, a little longer than the third; prothorax a fourth wider than long, the sides broadly arcuate and converging anteriorly, less arcuate and just visibly converging behind the middle; basal angles narrowly rounded, the apical well defined and prominent; transverse impressions nearly obsolete, the stria fine but broadly impressed; foveæ short, linear and feeble, at basal third; sides very narrowly and feebly reflexed, gradually a little more widely so basally; elytra elongate, fully two-thirds longer than wide, scarcely a fourth wider than the prothorax; sides parallel, very feebly arcuate, rounding in about apical third; subscutellar puncture strong; dorsal punctures two in number. Length (♀) 7.2 mm.; width 2.75 mm. Alaska (St. Paul Island). One specimen.....*planifer* n. sp.

Elytral striæ finer, less abruptly defined and feebly impressed, the intervals not exactly flat and not evidently uneven or punctulate. . 13

13—Form elongate, moderately convex, shining, the elytra not quite so polished as the anterior parts, piceous in color throughout, the thoracic margins narrowly pallid; head three-fifths as wide as the prothorax, with large and rather prominent eyes; antennæ slender, flavate, half as long as the body; last two palpal joints equal in length; prothorax quadrate, very slightly shorter than wide, the sides broadly arcuate, more converging anteriorly; apex moderately narrowed, deeply sinuate; basal angles narrowly rounded; surface with vestigial impressions and long and very feeble foveæ, the sides rapidly declivous, with narrow reflexed edge, scarcely differing at all basally; elytra three-fifths longer than wide, two-fifths wider than the prothorax, the sides rapidly ogivally rounded at apex; striæ very fine, not impressed; subscutellar puncture coarse; dorsal punctures three or four; three basal joints of the anterior male tarsi rather strongly dilated. Length (3♂, 7♀) 7.0–8.0 mm.; width 2.8 mm. Alaska (St. Paul Island)..... *beringi* n. sp.

Form still narrower, very elongate, more convex and smaller in size, strongly shining throughout above, scarcely less so in the female, blackish-piceous above throughout, the sides of the prothorax only very narrowly pallid; legs pale flavate as usual; head smaller and narrower than in the preceding, slightly more than half as wide as the prothorax, the eyes well developed, not very convex; last palpal joint a little longer than the third; prothorax unusually and evenly convex and very smooth from side to side, fully as long as wide to but little less; impressions all very feeble; sides narrowly reflexed, more widely at the narrowly rounded basal angles; elytra long, three-fifths to one-half longer than wide, a third wider than the prothorax, evenly rounding in about apical third; striæ rather fine, deeply impressed (♂), very moderately (♀); intervals somewhat strongly to feebly convex; subscutellar puncture strong; dorsal punctures two in number; anterior tarsi (♂) rather strongly dilated. Length (♂ ♀) 6.0–7.0 mm.; width 2.2–2.5 mm. Alaska (St. Paul Island). Fourteen examples..... *nanulus* n. sp.

Longulus approaches *obscurus* Lec., more closely than any other species and possibly may be identical, but it is stated of *obscurus* that the sides of the prothorax are distinctly depressed though hardly reflexed; in *longulus* the sides are strongly reflexed, more feebly at base, where the surface as usual becomes broadly deplanate; it is also said of *obscurus* that it is "minus elongatus." The very elongate form of *longulus* is its most striking feature; it is very much narrower and more elongate than *ruficollis* and more so even than in the narrower *quadricollis*, both of which had been described just before *obscurus* in the text (Pr. Acad. Phila., 1854, p. 37). So I hesitate to propose any synonymy at present.

Since my last study of this genus I have received a specimen of *confusus* Lec., taken by Sherman at Marquette, Lake Superior; it evidently belongs to the same group as the Alaskan species above described, and so may possibly be identical with *ingratus* Dej. It is much less elongate than *beringi* and very much larger than *nanulus*, which last is the smallest species known from North America.

The following are four additional species of this genus:

***Calathus ventricosus* n. sp.**—Form elongate-ovoidal, moderately convex, black, piceous beneath, the legs dark rufous; sides of the prothorax diaphanously pale; upper surface moderately shining, the elytra opaque; head somewhat elongate, four-sevenths as wide as the prothorax, with moderately convex eyes; antennæ ferruginous, nearly half as long as the body; palpi pale, the last joint slender, barely longer than the third; prothorax scarcely visibly wider than long, the sides feebly arcuate, gradually a little more so and moderately converging anteriorly, the apex deeply sinuate and two-thirds as wide as the base; basal angles blunt at tip; impressions and lineate foveæ scarcely traceable; sides abruptly and strongly reflexed throughout the length, narrowly toward apex, broadly but not deplanate basally; elytra somewhat over one-half longer than wide, one-half wider than the prothorax, oblong-oval, with distinctly arcuate sides, which as usual are not more arcuate basally, obtusely ogival behind the middle; striæ fine, somewhat deeper on the declivity; intervals virtually flat; subscutellar puncture distinct; dorsal punctures four; met-episterna subtriangular, but little longer than wide. Length (♀) 9.6 mm.; width 4.0 mm. Mississippi (Vicksburg).

I could only secure a single example of this interesting species, which can be compared only with *obesulus* Csy., differing in its smaller prothorax, more dilated elytra and less elongate antennæ—of the female in each case.

***Calathus peropacus* n. sp.**—Form very elongate-suboval and notably depressed, piceous-black and moderately shining, the elytra deeper black and densely opaque; under surface rufo-piceous, the legs dark rufous; head slightly elongate, four-sevenths as wide as the prothorax, the eyes moderate and rather prominent; palpi slender, piceous, the last two joints equal in length and thickness; antennæ blackish-piceous, slender, less than half as long as the body, the pubescence of the fourth joint beginning very abruptly at basal third; prothorax quadrate, as long as wide or very nearly, widest at the middle, the feebly arcuate sides less converging and straighter basally than apically; basal angles obtuse and rounded; apex much narrower than the base, deeply sinuate, with distinct and only slightly blunt angles; surface narrowly reflexed at the sides, gradually becoming broadly deplanate and more opaque, and also a little more reflexed at the edge, basally; impressions and foveæ vestigial, the short median stria evident; elytra four-fifths longer than wide,

scarcely two-fifths wider than the prothorax, the sides gradually rounding behind the middle; striæ very fine; intervals flat; subscutellar puncture distinct; dorsal punctures very fine, three in number. Length (♀) 10.5–11.0 mm.; width 3.75–4.0 mm. Arizona (Palmerlee),—H. A. Kaerber. Two specimens.

This species stands rather alone and is not closely allied to any other in my collection; it is much larger and less convex than either *opaculus* Lec., or *obesulus* Csy., and has the anterior parts less shining and the elytral striæ still finer and less deep. It is also very much larger than *sonoricus* Csy., with the latero-basal parts of the pronotum widely and concavely explanate in a manner not even suggested in *sonoricus*.

Calathus calator n. sp.—Narrow, elongate-suboval, rather convex, highly polished throughout, blackish-piceous, the anterior parts dark rufous; under surface pale piceous, the legs pale brownish-flavate; head half as wide as the prothorax, the eyes but feebly convex; antennæ slender, pale testaceous, more than half as long as the body; prothorax very nearly as long as wide, widest at about the middle, the sides very evenly arcuate throughout and finely reflexed, a little more so basally; surface not deplanate at the sides basally, the foveæ shallow, elongate and discal; impressions barely traceable, the stria very fine and feeble; apex deeply sinuate, only three-fourths as wide as the base; elytra elongate, subparallel, two-thirds longer than wide, barely perceptibly wider than the prothorax, the apex very gradually and evenly rounded; striæ fine but sharp, smooth; intervals feebly convex, the third with three punctures, the two anterior in the third, the third in the second, stria; tarsi long and slender; tarsi and tibiæ darker than the femora. Length (♀) 7.7 mm.; width 2.9 mm. Colorado (Peaceful Valley),—Cockerell.

This species can be compared only with *coloradensis*, but it is still narrower, with relatively narrower head and paler anterior parts and with the pronotal surface not deplanate toward the hind angles.

Calathus aquilus n. sp.—Form more abbreviated and smaller in size, polished and blackish-piceous throughout, the sides of the prothorax diaphanously somewhat paler; under surface blackish-piceous, paler anteriorly, the legs pale rufous throughout; head moderate, with slightly prominent eyes, evidently more than half as wide as the prothorax; antennæ pale, three-fifths as long as the body; prothorax shorter, more than a fourth wider than long, widest submedially, the sides very moderately reflexed, barely more so gradually toward base, arcuate, rather straighter behind the middle; surface feebly, subevenly convex, with fine transverse rugulæ, not deplanate postero-laterally; foveæ large, irregular, very shallow and scarcely definable, distant from the sides as usual; elytra shorter, barely one-half longer than wide, fully two-fifths

wider than the prothorax, oblong, with distinctly arcuate sides, gradually but more rapidly rounding apically; striæ fine, nearly smooth; intervals very nearly flat, the third with three punctures placed as in the preceding; anterior male tarsi with the first three joints distinctly dilated and subequal in length; hind tarsi very slender. Length (♂) 7.0 mm.; width 2.75 mm. Colorado (Ouray, 7500 ft. elev.),—Wickham.

Quite distinct from either *calator*, *coloradensis* or *reductus*, all of which are also inhabitants of Colorado, in its much more abbreviated form; *reductus* has the prothorax narrower and more elongate than in either of the others mentioned.

Pristodactyla Dej.

The following species is allied to *zuniana*, but differs in its smaller anterior parts, the head especially being much smaller, relatively wider elytra, more slender maxillary palpi, smaller mandibles, less equally and more anteriorly rounded sides of the prothorax and in a consequently pronounced difference of facies:

Pristodactyla neomexicana n. sp.—Deep black and rather shining, the elytra opaque; surface distinctly convex; legs piceous; head three-fifths as wide as the prothorax and very distinctly narrower than an elytron, with moderately prominent eyes; palpi pale testaceous, the last joint a little longer than the third, narrowly truncate at tip; antennæ ferruginous, the four basal joints more piceous, not quite half as long as the body; prothorax widest near apical third, slightly wider than long, the sides rather strongly rounded, oblique and feebly arcuate in fully basal half; apex sinuate, with well rounded angles, the basal angles still more broadly rounded; posterior transverse impression feeble, the anterior obsolete; stria deep, abbreviated a little at apex, attaining the base; foveæ linear, feebly impressed, smooth; sides very moderately reflexed, scarcely differing basally; elytra two-thirds longer than wide, almost one-half wider than the prothorax, obtusely ogival at apex, the parallel sides broadly, evenly arcuate; striæ fine, feebly impressed, finely punctulate; intervals almost flat; dorsal punctures three, the first at basal third; met-episterna slightly elongate; first three joints of the anterior male tarsi strongly dilated. Length (♂) 10.5–11.0 mm.; width 4.1–4.3 mm. New Mexico. One example from an unrecorded source and two from Cloudcroft, the latter sent by Knaus.

In both this species and *zuniana* the tarsal claws are virtually smooth beneath, without trace of fimbriolation, but, under high power, there are visible basally about three very feeble serruliform crenules. The type of this species was considered with the larger type of *zuniana* in my previous work on the genus (Mem. Col., IV, p. 160) but it evidently represents a distinct species.

The two following species are much narrower, more parallel and less ventricose than *arizonica*, *zuniana* or *neomexicana*, and are of a paler piceous-brown color. They evidently belong to the same group as that represented by *Anchomenus mollis* Dej., of Alaska, which is erroneously assigned generically, but differ in some respects according to the description of Dejean:

Pristodactyla binaria n. sp.—Body elongate, parallel, feebly convex, shining, with opaculate and closely micro-reticulate elytra, dark brown in color, the edges slightly pale; under surface and legs rufo-ferruginous; head slightly elongate, with moderately prominent eyes, two-thirds as wide as the prothorax, the anterior impressions shallow and vague; palpi pale, the fourth joint distinctly longer than the third; antennæ uniform pale rufo-ferruginous, moderately slender, about half as long as the body, the third joint distinctly longer than the fourth; prothorax a fifth or sixth wider than long, widest a little before the middle, the sides evenly and moderately rounded, moderately oblique and usually very slightly sinuate posteriorly, the angles broadly rounded, the puncture on the edge distinct; base as wide as the apex, margined, transverse medially, becoming strongly and gradually arcuate laterally; apex moderately sinuate, the angles blunt at tip; margins strongly reflexed, broadly so at base, where however they are separated from the foveæ, which are elongate and feebly, vaguely impressed and virtually smooth; surface almost smooth, the impressions feeble, the stria fine, impressed, not attaining the base; elytra elongate, oblong-subparallel, with feebly arcuate sides, becoming gradually but little more rounded basally; apex gradually rounded, the sinus obsolete, nearly two-thirds longer than wide and about three-sevenths wider than the prothorax; striæ fine, smooth, evidently impressed, the scutellar stria long, the ninth midway between the eighth and the edge; intervals slightly convex, with fine and feeble scattered punctures laterally, the third with two punctures at the second stria, before the middle and near apical fourth; metepisterna rapidly narrowed, not quite twice as long as wide; anterior male tarsi unusually strongly dilated, feebly sulcate medially. Length (♂ ♀) 8.5–9.8 mm.; width 3.3–3.8 mm. S. Arkansas. Five examples.

I have no reason to doubt the accuracy of the habitat assigned this species, but have no record of the collector or other data connected with the specimens. The species from the far north—"prope fines Aquilones," described by LeConte under the name *Pristodactyla advena*, and conceived by the author to connect *Pristodactyla* and *Pristonychus*, I have not seen, but it is evidently of the *mollis* group and related to *binaria* and *scolopax*, here described; but it is not piceous in color and in great part dull in lustre, as in the latter two species, but of a shining black; it is 9.7 by 3.5 mm. in dimensions and the elytra have two dorsal punctures.

The following species is much smaller, and, relatively, the prothorax is not so large:

Pristodactyla scolopax n. sp.—Body smaller and narrower, deeper umber-brown in color, the under surface and legs nearly as in the preceding; general characters subsimilar; head not elongate, more than two-thirds as wide as the prothorax, with more prominent eyes; antennæ nearly similar; prothorax almost similar but not paler at the sides, which are straight and feebly oblique posteriorly, with the basal angles more narrowly rounded and with more conspicuous puncture; side margins rather less broadly reflexed; general features similar; elytra narrower and still more elongate, only about a third wider than the prothorax, the gradually rounded apex without sinus; striæ, intervals and two dorsal punctures nearly as in *binaria*; tarsi almost similar. Length (♂ ♀) 7.8–8.7 mm.; width 2.8–3.1 mm. Colorado. Levette collection. Nine specimens.

Besides *mollis* and the two preceding, there are two other Alaskan species which may be assigned to *Pristodactyla*, both having two dorsal elytral punctures; one of these, *Anchomenus lenis* Mann., from Kodiak Island, is said to differ from *mollis* in its larger and narrower prothorax, more narrowed and more strongly reflexed toward base, obliquely rounded basal angles and more elongate elytra, these characters fitting the two here described better than the recorded characters of *mollis*. According to a manuscript note by LeConte, *lenis*, in fact, is said to be a *Pristodactyla*.

The second species was named *Anchomenus dulcis* by Mannerheim, and is from the Kenai Peninsula; it is said to differ from *lenis* in its still more elongate form, longer and narrower prothorax, not linearly but arcuately narrowed posteriorly, with less reflexed margins and less obliquely truncate hind angles, and also in having shorter elytra. LeConte does not seem to have seen this species.

The following species resembles *semirufa* somewhat in general form and size, but has the head and prothorax relatively smaller, the elytra more opaque and the coloration very different:

****Pristodactyla subopaca*** n. sp.—Narrow, elongate-oval, small in size and moderately convex, deep black, the legs piceous-black; upper surface highly polished anteriorly, the elytra rather densely opaque; head barely at all elongate, fully two-thirds as wide as the prothorax, the eyes well developed but only moderately prominent; palpi rufous; antennæ slender, fusco-testaceous, clearer basally, fully four-sevenths as long as the body; prothorax very little shorter than wide, widest before the middle, the sides moderately and subevenly arcuate throughout the length and finely reflexed; basal angles obtuse and rather broadly

rounded, the apical bluntly rounded; base transverse, rounding laterally, very little wider than the feebly sinuate apex; surface evenly and slightly convex throughout, very smooth and impunctate, the transverse impressions very feeble, the stria fine, subentire; foveæ small, narrow, feebly impressed, linear and at some distance from the sides; elytra elongate-oval, three-fifths longer than wide, two-fifths wider than the prothorax, the sides not more arcuate at base; apex gradually rounded, without trace of sinus; basal margin sinuate, making a very sharp and acute angle with the sides; striæ fine, with very feeble and obscure micro-punctulation; intervals perfectly flat, the third with four small punctures, all at the third stria; under surface black, shining, the legs moderate. Length (♀) 8.0 mm.; width 3.0 mm. Mexico (Tres Marias, Morelos),—Wickham.

I can find no published description according in any way with this very distinct species and therefore regard it as undescribed. The tarsal claws are long and have within a distinct fringe of rather long spicules.

Onypterygia Dej.

Onychopterygia G. & H. (emend.)

In many respects this remarkable neotropical genus is allied closely to the Platynid series of genera, but the tarsal claws are strongly and closely pectinate beneath. The integuments are more or less brilliantly metallic in color and the genus therefore constitutes one of the more conspicuous types of the Carabidæ. The species are rather numerous. *Höpfneri* Dej., is a larger species, having the cupreous-red and uniformly colored elytra dull in lustre, in a way foreign to most of the others; my representatives, taken by Baron, in Guerrero, are apparently larger than Dejean's type, measuring as much as 14 mm. in length, but they seem to satisfy his description otherwise. *Tricolor* and some others have the elytral apices spiniform. The following seems to be a hitherto undescribed small species:

**Onypterygia cupricauda* n. sp.—Outline elongate-suboval, strongly convex and highly polished throughout, the head and pronotum black, with feeble bluish lustre; elytra brilliantly green, gradually cupreous apically; under surface obscure rufo-ferruginous, the legs piceous, the femora more nearly black; head elongate, rhomboidal, nearly three-fourths as wide as the prothorax, with rather prominent and well developed eyes; anterior impressions small, deep, linear; mandibles small, nearly straight except at tip; mentum tooth sharply triangular; palpi piceous, pale at tip, the last joint fusoid, gradually pointed, as long as the third and a little thicker; antennæ slender, fusco-ferruginous, the

joints nubilously pale basally, distinctly more than half as long as the body; prothorax about as long as wide, the sides rounded, oblique basally, becoming feebly sinuate at the distinct angles, very finely reflexed throughout the length; apex sinuato-truncate, narrower than the base; surface slightly punctate at the basal foveæ, which are rather coarse and deep, linear; transverse impressions both feeble, the stria fine, biabbreviated; elytra evenly oblong-oval, with arcuate sides and obtusely ogival apex, two-thirds longer than wide, not quite twice as wide as the prothorax, the oblique apices only just visibly sinuate, evenly rounded at the suture, the latter wholly devoid of prolongation; striae fine but abrupt, finely punctulate; intervals flat; met-episterna much elongated; legs slender. Length (♀) 7.5–8.0 mm.; width 2.8 mm. Mexico (Guerrero),—Baron.

This small, metallic and convex species is evidently allied to *œneipennis* Chd., but in that the under surface is described as shining black, and the brilliantly green elytra are suffused with coppery reflection throughout; it is from Oaxaca.

Lachnophorus Dej;

The following is very close to *elegantulus* Mann., but seems to differ subspecifically:

Lachnophorus elegantulus ssp. *ocularis* nov.—Almost exactly similar to *elegantulus* in every way, except that it is a trifle stouter in the hind body and that the legs are pale flavate throughout; eyes slightly larger, separated by less than their width from a vertical point of view; thoracic constriction less sharply marked, the short sides thence to the base less parallel; elytra nearly similar in form and marking, but with the punctures of the interstitial series rather more evident. Length 5.2 mm.; width 2.15 mm., Texas. A single specimen.

In *elegantulus* the eyes are separated by just twice their width when viewed vertically.*

Galerita Fabr.

This remarkably isolated genus is almost peculiarly American and contains a large number of species; so far as known to me they may be segregated into two subgeneric groups, based upon peculiarities of elytral sculpture, but it would be premature, without the African and East Indian representatives, to assign definite names to these groups. In all the subarctic North American species the elytra have a perfectly even surface, with simple and feebly punctate striae, the intervals with fine and evenly diffused

*A small form occurring at Yuma, Ariz., seems to represent a valid variety of *Tetragonoderus fasciatus* Hald., different from *undulatus* Lec.

T. L. Casey, Mem. Col. IX, Feb. 1920.

punctulation and pubescence; but, in the tropical forms, the elytra generally have many fine costules, with a finer geminate pair of raised lines along the middle of each interval. Between the very long scutellar stria and the feebly deflexed basal part of the first regular stria, there is usually a series of punctures, particularly developed in species of the *lecontei* type. The joints of the anterior male tarsi are very asymmetric, the outer part being bluntly produced; this asymmetry is far more conspicuous than in the Pterostichid genus *Loxandrus*. The pronounced isolation of *Galerita* in morphologic type, is even more evident in the larva, as shown by Sallé—quoted by Lacordaire—than in any of the numerous peculiarities of the imago. There is such a monotonous consistency in form, size and coloration among the species as to have led to a good deal of confusion in synonymy, the case being rather like that of *Brachinus* in this respect; but in reality our species are far more numerous than hitherto suspected, those at present represented in my collection being readily separable as follows:

Elytral surface even.....	2
Elytral surface finely costulate; legs black.....	16
2—Legs pale ferruginous in color.....	3
Legs black.....	14
3—Sides of the head behind the eyes partially parallel or very moderately oblique, generally a little more oblique in the male than in the female.....	4
Sides strongly oblique from the eyes to the base in both sexes.....	9
4—Antennæ longer and very slender in both sexes, the fourth joint rather more than four times as long as wide.....	5
Antennæ much shorter, the fourth joint not four times as long as wide...	8
5—Body more slender, the elytra about twice as long as wide in both sexes. Black, the prothorax above throughout and beneath, except at base, and also the legs, ferruginous, the tarsi darker; head longer than wide, three-fourths as wide as the prothorax, the eyes very prominent, at one-half more than their length from the base; tempora obliquely rounded from the eyes to the base; antennæ of the usual coloration, the basal joint ferruginous, the next three black, the remainder blackish-brown, gradually paler toward the antennal tip; neck much constricted; prothorax somewhat longer than wide, the parallel sides broadly and subevenly arcuate, broadly reflexed, more so at base, sinuate before the basal angles, which are obtuse, blunt and reflexed, the base one-half wider than the feebly sinuate apex; apical angles broadly rounded and obliterated, the surface feebly, subevenly convex, strongly and densely punctate and feebly rugulose, the pubescence pale; surface impressed transversely at base; elytra nearly twice as wide as the prothorax, parallel, the	

sides evenly rounding at base; apex obliquely truncate, the external angle rounded; striæ fine, feebly punctulate, the intervals closely, feebly punctate and with short fusco-fulvous pubescence, the general surface dull and strongly micro-reticulate; anterior male tarsi with a long oblique external series of squamules as usual. Length (♂ ♀) 16.0-16.8 mm.; width 5.3-5.65 mm. Missouri (St. Louis); also a single unlabeled male from the Levette collection.

intermedia Csy.

Body less slender, the elytra a little less than twice as long as wide in the male, wider in the female. 6

- 6—Size much smaller than in the two following, the prothorax narrow, the sides deeply sinuate before the basal angles. Coloration, lustre, sculpture and vestiture nearly as in the preceding, the short elytral hairs still darker; head narrow, much elongated, deeply and densely punctate, four-fifths as wide as the prothorax, the eyes abruptly very prominent, the tempora circularly rounded to the neck and becoming nearly parallel toward the eyes; palpi moderate, the last joint very obliquely truncate as usual; antennæ sharply tricolored, joints two to four black, the remainder somewhat pale red-brown; prothorax narrow, elongate, much less than half as wide as the elytra, the general structure and sculpture as in the preceding but narrower and more elongate, the sinus before the basal angles deep, the reflexed angles more conspicuous; elytra three-fourths longer than wide, in general form and sculpture as in *intermedia*; anterior male tarsi even more strongly, asymmetrically dilated, the basal joint relatively distinctly shorter than in *intermedia*. Length (♂) 15.7 mm.; width 5.5 mm. Missouri (St. Louis).

angusticeps n. sp.

Size larger, the prothorax and head broader, the thoracic sides much more shallowly and broadly sinuate before the reflexed and obtuse basal angles. 7

- 7—Color black, the prothorax and legs as in the preceding, the elytra varying from nearly black to decidedly bluish; head somewhat wider, moderately elongate, the punctures rather coarse, deep and dense, the front with a small rufous medial spot; eyes very prominent, the tempora feebly converging and circularly rounded to the neck; antennæ slender, sometimes uniformly fusco-ferruginous though paler at base, rarely with the tricoloration of the preceding more or less evident; prothorax slightly longer than wide, the parallel sides broadly, subevenly arcuate, becoming sinuate basally and parallel for a short distance at the angles, the tips of which are sharply defined; surface somewhat densely and rugulose punctate, broadly subdeplanate along the sides, feebly, transversely impressed at base, deeply concave at the reflexed angles; scutellum narrow, acutely attenuate; elytra twice as wide as the prothorax, three-fourths to four-fifths longer than wide, just perceptibly widest a little behind the middle, the feebly arcuate sides evenly rounded at base; apices and general surface as in the preceding two species; anterior male tarsi only moderately dilated, very asymmetric, the external fulvous fringe conspicuous, the basal joint as long as the

next two combined. Length (σ^7 ♀) 17.0-18.5 mm.; width 6.0-6.6 mm. Rhode Island, New York (Long Island), Maryland, Pennsylvania, Lake Superior (Marquette), Indiana, Iowa and Missouri. [*G. americana* Fab., nec Linn.; *cyanipennis* Dej., and *cordicollis* Chd.].....**janus** Fabr.

Color in general as in the preceding, except that the elytra are deep black and without bluish hue; head elongate, three-fourths as wide as the prothorax, coarsely punctato-rugose, more sparsely punctate anteriorly on the median longitudinal convexity, the central red spot scarcely definite; pubescence coarse, fulvous and rather long; eyes very prominent, the tempora circularly rounded, subparallel behind the eyes; neck deeply constricted as usual; antennæ rather long, colored as usual, the first four joints conspicuously pubescent; prothorax large, elongate, widest at two-fifths from the apex, the sides broadly arcuate, broadly sinuate basally, the angles very obtuse but with definite tips, broadly and strongly reflexed; punctures dense and relatively fine, subrugose; surface broadly subdeplanate laterally, the edge narrowly reflexed; elytra nearly twice as wide as the prothorax, four-fifths longer than wide, in general form and sculpture nearly as in *janus*, but with the short, fine and abundant pubescence more obscure, finer; anterior male tarsi with the first three joints strongly, obliquely asymmetric as usual, the first as long as the next two. Length (σ^7) 21.0 mm.; width 6.9 mm. Florida. [*G. thoracica* Csy. nec Chev.].....**caseyi** Leng

8—Form notably elongate, colored as in the preceding, the elytra deep black; head broad, oblong, slightly longer than wide, nearly four-fifths as wide as the prothorax, the eyes large but only very moderately prominent, at less than one-half more than their own length from the base, the tempora near the eyes nearly as prominent as the latter, rapidly, circularly oblique thence to the constricted neck; surface convex, deeply and densely punctato-rugulose and with a conspicuous central red spot, immediately before which there is a small polished smooth spot; anterior impressions broad; antennæ short, the basal joint pale rufous, the next three deep black, the remainder pale brown, one to four with dense shaggy pubescence; prothorax not distinctly longer than wide, widest slightly before the middle, the sides rather strongly, evenly arcuate, becoming parallel for a short distance at base, the angles right but distinctly rounded; base rectilinearly transverse, the surface densely punctate, not deplanate though gradually sloping laterally, the basal foveæ deep, connected transversely by a feebly impressed line; elytra very feebly inflated posteriorly, more than three-fourths longer than wide, in general form, sculpture and pubescence as in the preceding species, not quite twice as wide as the prothorax. Length (♀) 17.7 mm.; width 6.0 mm. Rhode Island (Boston Neck).....**occipitalis** n. sp.

9—Tempora longer, much longer than the length of the eyes.....10

Tempora notably short, about as long as the eyes.....13

10—Base of the prothorax relatively wider, only a little narrower than the maximum width.....11

Base much narrower than the maximum width.....12

- 11—Sinus before the basal thoracic angles deep, rendering the angles laterally prominent; antennal pubescence moderate. Form rather ventricose, the hind body only moderately elongate; coloration and sculpture nearly as in all the preceding species, the elytra black, without bluish tinge; head but slightly elongate, four-fifths as wide as the prothorax, the punctures strong and close-set, the pubescence rather long, fulvous; frontal red spot more or less evident; eyes very prominent; tempora converging and arcuate; antennæ slender, the basal joint ferruginous, with blackish tip, the next three black, the remainder pale red-brown; prothorax distinctly elongate, widest at the middle, where the sides are rather strongly rounded, thence oblique and less arcuate anteriorly, more oblique behind to the rather deep sinus, the basal angles obtusely rounded at tip; surface moderately and closely punctate and subrugulose, gradually feebly reflexed at the sides, the edge abruptly upturned; foveæ deeply concave; elytra three-fourths longer than wide, distinctly more than twice as wide as the prothorax, rather more convex than usual, the humeri more rapidly rounded; striæ rather fine but deep, punctulate, the ground punctures and pubescence nearly as in *janus*; punctures of the subscutellar series widely separated. Length (♂) 16.5 mm.; width 5.8 mm. Florida (New Augustine),—Ganung. [*G. dubia* Lec.]. Probably described by Dejean from a LeConte specimen from southern Georgia.

lecontei Dej.

- Sinus toward base of the thoracic sides broad and feebler, the sides becoming subparallel thence to the base; antennæ bristling basally with long shaggy pubescence. Form still more ventricose, the elytra relatively broader and not so convex; coloration as in the preceding; head nearly as in *lecontei* but with the punctures becoming very fine and sparser basally, the eyes even more conspicuously prominent and the tempora even more oblique to the narrow neck; central red spot distinct; antennæ slender, pale brown, the basal joint brighter rufous, not dark at tip, joints three to five not more than piceous; prothorax slightly broader though longer than wide, the sides nearly similar, except basally, the basal angles very much more broadly rounded; surface more finely punctured and with shorter, finer pubescence, less reflexed at the sides, the foveæ narrower, remote from the sides, not forming part of the reflexed angles so evidently as in *lecontei*; elytra two-thirds longer than wide, nearly two and one-half times as wide as the prothorax, less convex but otherwise nearly similar, except that the punctures of the subscutellar series are rather more close-set and more distinct. Length (♀) 16.5 mm.; width 6.3 mm. Texas (near El Paso),—Dunn.....*crnicornis* n. sp.

- 12—Body elongate, moderately ventricose and only feebly convex; coloration as in all the preceding species, the black elytra never with very evident bluish bloom; head oval, rather more than three-fourths as wide as the prothorax, with a central rufous spot sometimes elevated in prolongation of the anterior axial convexity; punctures close-set, the erect vestiture bristling; eyes very promi-

nent, the tempora very oblique and moderately arcuate, longer than in the two preceding species; antennæ slender, tricolored as usual; prothorax notably elongate, widest and strongly rounded at the middle, the sides thence oblique and straighter to the apex, broadly sinuate basally, the angles obtusely rounded and more or less feebly everted; surface less convex than usual, finely, very closely punctate and subrugulose, moderately flavo-pubescent; sides broadly declivo-explanate, the fine edge sharply upturned as usual; foveæ large, concave; elytra three-fourths to four-fifths longer than wide, more than twice as wide as the prothorax, feebly subinflated posteriorly, the humeri strongly rounded; striæ moderately fine, sharply grooved, finely, feebly punctate, the general ground sculpture as in *janus* and the other species before described; male with the external oblique angles of the first three anterior tarsal joints rather sharply rounded, the basal joint as long as the next two. Length (σ^7 ♀) 17.0–19.0 mm.; width 5.5–6.6 mm. Pennsylvania and North Carolina (Asheville). [*G. americana* Dej., nec Linn.; *borealis* Cast.; and *longicollis* Chd.]. **bicolor** Drury

A—Similar in nearly all respects to *bicolor* but not quite so elongate, the head a little narrower; prothorax distinctly less elongate, but just visibly longer than wide, the sides more evenly rounded though similarly widest at the middle, the sinus rather more abruptly formed; elytra two-thirds longer than wide. Length (σ^7) 17.0 mm.; width 5.8 mm. Iowa (the locality unrecorded).
iowensis n. subsp.

B—Nearly as in *bicolor* but narrower, the head narrower, with still somewhat more prominent eyes, the tempora—converging thence to the neck—straighter; prothorax narrower and relatively still more elongate, the basal angles rather less broadly rounded; elytra narrower, twice as long as wide. Length (♀) 17.5 mm.; width 6.0 mm. Indiana. **rhombiceps** n. subsp.

Body still more elongate than in *bicolor* and much larger in size, similar in coloration, sculpture and vestiture; head and antennæ nearly similar, the first antennal joint longer, bright rufous, the remainder pale brownish, two to four with feeble obscure cloud in part; prothorax nearly similar, the sides before the middle feebly oblique and evenly, very moderately arcuate; sinus before the obtuse basal angles rather deep though gradually formed, the angles reflexed; foveæ very large and concave, traceable anteriorly very feebly almost to the apex; close punctures moderate, subruguliform, the pubescence abundant, pale and bristling; elytra nearly as in *bicolor* but rather more elongate, three-fourths (♀) to four-fifths (σ^7) longer than wide, rather more than twice as wide as the prothorax, similarly with the punctures of the long subscutellar series very much less evident than in *lecontei* and related forms. Length (σ^7 ♀) 19.0–20.5 mm.; width 6.6–7.0 mm. Florida (Palm Beach). Two examples. **obliqua** Csy.

13—Form notably narrow, only moderately convex, with color and general sculpture very nearly as in all the preceding species, smaller in size; head distinctly elongate, the eyes well developed and notably

prominent, at just visibly less than their own length from the base, the base of the head behind them subcircularly rounded; central red spot distinct; punctures somewhat finer basally; pubescence abundant; antennæ slender, the first joint bright rufous, two to four piceous, the remainder dark brown, the fourth (σ^7) about four times as long as wide, nearly so (φ); prothorax slightly (φ), distinctly (σ^7), longer than wide, widest before the middle, the sides subevenly rounded, becoming gradually sinuate before the basal angles, which are very obtuse though laterally somewhat prominent; punctures fine, rather close, the surface rather dull; foveæ large, concave, faintly prolonged anteriorly to beyond the middle; elytra twice as long as wide (σ^7), nearly so (φ), barely twice as wide as the prothorax, the general form and punctuation as in all the preceding, the striæ fine, obscurely punctulate, the subscutellar series distinct; anterior male tarsi asymmetrically dilated though more narrowly than usual, the first joint rather longer than the next two combined. Length (σ^7 φ) 15.0–15.5 mm.; width 4.9–5.5 mm. California (San Diego),—Dunn.....*californica* Mann.

A—Similar to *californica* but less slender and with a relatively somewhat smaller prothorax, which is however similar in form, except that the lateral sinus is more shallow, the obtuse angles less prominent laterally; eyes similarly prominent; fourth antennal joint between three and four times as long as wide in both sexes; elytra similar but broader, never quite so much as twice as long as wide, the striæ similarly fine. Length (σ^7 φ) 15.0–15.8 mm.; width 5.2–5.7 mm. Arizona and Texas.....*arizonica* n. subsp.

Form much more abbreviated, smaller in size, more ventricose, similar in coloration, lustre and sculpture; head only slightly longer than wide, the eyes prominent, at their own length from the base, the base circularly rounded; red central spot similar; antennæ shorter, the fourth joint barely three times as long as wide, the coloration as in *californica*, except that joints two to four are more nearly black; prothorax almost similar in outline but relatively smaller and narrower, barely visibly wider than the head, the evenly rounded sides more gradually and shallowly sinuate basally, the angles not prominent laterally, rounded; elytra very much shorter and relatively wider, barely three-fifths longer than wide, two and one-half times as wide as the prothorax; striæ about twice as coarse and deeper, much less evidently punctulate. Length (φ) 14.0 mm.; width 5.0 mm. Arizona (Yuma),—Dunn.....*infirmata* Csy.

14—Strial intervals somewhat coarsely, closely and roughly punctate. Form nearly as in *janus*; head, palpi, antennæ, body beneath and legs black; prothorax reddish-yellow, the elytra decidedly bluish; head oval, very broad behind the eyes, somewhat as in *janus*, coarsely and densely punctate; prothorax as in *janus*, oval, narrowed behind, broadest in front of the middle; hind angles very obtuse, the surface somewhat densely and coarsely punctate; elytra oval, rather depressed, black, the surface decidedly blue, especially at the sides, striate, the striæ distantly punctured; surface sparsely pubescent; under surface more shining, less closely punctate and

- more sparsely pubescent. Length 18 mm. Arizona. [*G. decipiens* Horn].....*mexicana* Chd.
 Strial intervals finely, feebly, rather closely and evenly punctulate as in *janus* and the other preceding species.....15
- 15—Body, excepting the ferruginous prothorax above and beneath, black, the elytra without obvious bluish lustre; head large, elongate, four-fifths as wide as the prothorax, the eyes well developed and prominent, the tempora behind them strongly and circularly rounding to the neck; surface coarsely and closely punctate, the central red spot distinct; antennæ rather long and slender, the first four joints black, the remainder paler, brown; palpi black, pale at tip; prothorax fully a fourth longer than wide, widest before the middle, the parallel sides broadly and evenly arcuate, becoming moderately sinuate for a short distance before the obtuse hind angles; foveæ rather sharply impressed, and with very feeble extension traceable anteriorly nearly to the apex; surface somewhat coarsely, densely, subrugulose punctate and with suberect pale pubescence; elytra narrow, twice as long as wide (σ^7), barely or not quite twice as wide as the prothorax, of the usual outline; striæ fine, feebly micro-punctulate, the subscutellar series rather finely punctured; anterior male tarsi with the first three joints dilated and very obliquely produced externally, the first barely as long as the next two. Length (σ^7) 17.0–18.0 mm.; width 5.7–5.8 mm. Kansas.....*atripes* Lec.
 Body smaller, narrower, but, at the same time, more ventricose, the head and prothorax relatively much smaller; coloration and general sculpture nearly similar; head slightly elongate, only very little narrower than the prothorax, the eyes rather large, very prominent, at their own length from the base, the tempora more converging behind them to the neck than in *atripes* and much more feebly, evenly arcuate; red spot small and feeble; punctures close, smaller than in *atripes*; anterior parts more sparsely and very coarsely punctato-rugose, nearly flat, scarcely biimpressed; antennæ nearly as in *atripes*; prothorax less elongate, smaller, of almost similar outline, but with the parallel sides rather more arcuate, the basal sinus longer and more gradually formed, the angles narrowly blunt, slightly prominent laterally; surface and foveæ nearly similar, the thin side margins in the same way sharply and strongly reflexed, the general punctuation less coarse; elytra four-fifths longer than wide, much more than twice as wide as the prothorax and almost four times as long, feebly inflated behind but nearly of the usual outline, the striæ fine, the subscutellar series distinct; anterior male tarsi very moderately dilated, the first joint as long as the next two. Length (σ^7) 15.5 mm.; width 5.4 mm. Texas (Amarillo),—Shantz.
melanopus n. sp.
- 16—Body large, moderately convex, not very slender, dullish in lustre, black, excepting the dark rufo-ferruginous prothorax above and beneath; head but slightly elongate, three-fourths as wide as the prothorax, with very prominent eyes, the tempora very short, circularly rounded to the neck, only two-thirds as long as the eyes; surface coarsely and subrugosely punctate; anterior half broadly

biimpressed, with a medial cariniform elevation; antennæ with the first four joints black, the remaining joints pale brown, more obscure at their tips; prothorax large, barely visibly longer than wide, widest before the middle, with broadly, evenly rounded subparallel sides, becoming parallel near the blunt basal angles; surface coarsely, closely, subrugosely punctate; elytra slightly inflated behind the middle, fully three-fourths longer than wide, not quite twice as wide as the prothorax; surface with complex sculpture, the fine smooth ridges nine in number, the intervals strongly micro-reticulate, and, along the middle of each, there are two finer close-set carinæ, separated by a deep groove, which is feebly punctured along the bottom, the space between each of the fine axial ridges and the coarser ridges has very fine and shallow punctures, resembling completely the fine interstitial punctures of *janus*, *bicolor* and other more northern species; sterna more coarsely punctured than the abdomen; anterior male tarsi dark ferruginous, strongly asymmetric, the basal joint not as long as the next two. Length (♂) 19.0 mm.; width 6.8 mm. Cuba (Havana),—Baker. [*G. insularis* Cast., and *erythrodera* Brul.].....**ruficollis* Dej.

Body much smaller and more slender, deep black and more shining, the legs black, the elytra alutaceous and differing in outline from those of any of the preceding, being elongate-oval and wholly without humeri; head slightly longer than wide, only a little narrower than the prothorax, coarsely but not densely punctate, more sparsely at base; eyes very prominent, at one-half more than their own length from the base, the tempora not very rapidly converging and circularly rounded; rufous spot wanting; medial cariniform line separating the two impressions continuing to the line posteriorly tangent to the eyes; antennæ slender, the first four joints black, the remainder piceous; prothorax narrow and very elongate, widest before the middle, the parallel sides broadly, evenly arcuate, very gradually and feebly oblique posteriorly, becoming parallel at base, which is transverse and four-fifths the maximum width; surface subdeplanate laterally, the foveæ long, moderately concave; median line broadly, feebly impressed, with a fine axial stria; punctures coarse and rather irregularly close-set; elytra gradually narrowing from the middle to the base, four-fifths longer than wide, twice as wide as the prothorax; sculpture nearly as in *ruficollis*, except that the two fine axial costules of each interval are finer and feebler, and not separated by a deep groove, and that the space between each of these costular threads and the principal costæ, which are very moderate, is very sparsely and obsoletely punctulate; under surface shining; anterior male tarsi black, very asymmetric, the external lobes very oblique. Length (♂) 15.0–16.5 mm.; width 4.6–5.2 mm. Isthmus of Panama (Natá).....**panamensis* n. sp.

The species just described under the name *panamensis*, is evidently related to *mustelina* Bates, from Costa Rica, but is very much smaller, *mustelina* being 18 mm. in length, and the form of

the prothorax "antice gradatim modice angustato" must be quite different, the sides, except at base, in *panamensis* being parallel and very evenly arcuate from the basal sinus to the apex. The species described above as *obliqua*, is well distinguished from *bicolor*, not only by the materially larger size, but by the form of the anterior male tarsi, the third joint being much smaller than the second in *bicolor* and *iowensis*, but exactly equal to the third in *obliqua*. *Thoracica* Chev., from Mexico, is possibly not identical with the West Indian *ruficollis* (*erythrodera*), which would render valid the name *caseyi*, substituted for *thoracica* Csy., by Leng.

Loxopeza Chd.

This is another genus in which the joints of the anterior male tarsi are asymmetric, though to a very slight degree when compared with the preceding genus, and in some cases the tarsus must be viewed carefully to recognize the obliquity of the joints at all. Nevertheless, I believe that *Loxopeza* should be maintained as distinct from *Lebia*; in *Lebia pleuritica* and *enormis*, having apparently symmetric tarsi, the peculiar habitus of *Loxopeza* is reproduced, and I therefore think that these two species should be regarded as *Loxopeza* rather than *Lebia*. The three basal antennal joints and a clearly marked basal node of the fourth are glabrous as in *Platyninæ*. The ten species in my collection, which, at any rate, I prefer to record as *Loxopeza*, may be distinguished readily as follows:

- Fourth joint of the hind tarsi deeply emarginate.....2
 Fourth joint feebly emarginate.....5
 2—Head black. Body moderately convex and ventricose, strongly shining, pale rufo-flavate, the head black but with pale epistoma, labrum and mandibles, the elytra bright steel-green, the epipleura and abdomen piceous; head four-fifths as wide as the prothorax. with large and rather prominent eyes, the front finely and feebly rugulose; antennæ slender, fusco-testaceous, clearer basally; prothorax four-fifths wider than long, widest before the middle, the sides straight basally, the angles more than right but only slightly blunt; surface feebly rugulose, very broadly reflexed and smoother at the sides, the anterior impression obsolete, the posterior straight and deep near the base and through half the width; elytra oblong, a third longer than wide, twice as wide as the prothorax, rapidly narrowing at apex, the external angle of the truncature rounded; striæ very deeply and conspicuously impressed, the micro-punctuation scarcely discoverable, the seventh and eighth fine and not

impressed, the intervals notably convex; scutellum pale. Length 7.2 mm.; width 3.3 mm. New York (Buffalo).....*tricolor* Say

Head pale, similar in color to the prothorax, legs and most of the under surface; prothorax widest at about the middle, the sides rounded and widely reflexed.....3

3—Size smaller, the striæ fine and feebly impressed, the outer angle of the truncature rounded. Color rather pale rufo-flavate throughout, excepting the epipleura and abdomen, which are piceous and black respectively, the elytra dark blue; head rather more than three-fourths as wide as the prothorax, with large and prominent eyes; front faintly strigilate near the eyes; antennæ slender, blackish, the first three joints testaceous; prothorax four-fifths wider than long, the basal angles obtuse but not rounded; rugulæ fine and faint; basal channel not very deep; elytra two-fifths longer than wide, twice as wide as the prothorax, gradually arcuately narrowing behind; surface shining, though micro-reticulate, the striæ closely micro-punctulate, the third with two widely separated punctures as usual; intervals very nearly flat; tarsi slender, blackish. Length 5.4–6.5 mm.; width 2.6–2.9 mm. New Jersey, Indiana, Illinois and Lake Superior (Marquette). Abundant.....*atriventris* Say

Size rather large, the striæ deeply impressed, the intervals convex; elytra dark indigo-blue; prothorax relatively wider.....4

4—Outer angle of the elytral truncature rounded. Body stout, oblong-suboval, moderately convex, strongly shining, the elytral micro-reticulation fine, very feeble in the male; coloration as in *atriventris*, except that the abdomen and epipleura are piceous and the tarsi not blackish; head nearly three-fourths as wide as the prothorax, with large and remarkably prominent eyes, the front feebly and unevenly rugulose; antennæ slender, half as long as the body, fusco-testaceous, the first three joints paler; prothorax twice as wide as long, the strongly arcuate sides very convergent anteriorly; basal angles rather obtuse, the tips sometimes bluntly subprominent; surface feebly rugulose, smoother in the broad lateral reflexed regions; base broadly pedunculate, the transverse channel along the peduncle rather deep; elytra a little longer in the male, two-fifths longer than wide, four-fifths wider than the prothorax; striæ deeply impressed, with very obscure micro-punctulation; intervals convex, having some feeble scattered punctulation laterally; anterior male tarsi distinctly dilated, the third joint feebly and bluntly channeled above. Length 8.7–9.8 mm.; width 4.1–4.7 mm. New York to northern Illinois and southward to North Carolina. Abundant.....*grandis* Hentz

A—Similar to *grandis* throughout in coloration and size, the elytra rather more alutaceous, with nearly flat intervals and less deeply impressed striæ, which are more evidently micro-punctulate; antennæ shorter, less than half as long as the body, the joints much less elongate; scutellum similarly pale. Length (♀) 8.5 mm.; width 3.9 mm. Texas (Brownsville),—Wickham.

rivularis n. subsp.

Outer angle obtuse but rather well defined, not definitely rounded; size

larger. General form and coloration as in *grandis*; elytra shining, the micro-reticulation fine and faint; head in form and relative size nearly similar, the large eyes very prominent; surface feebly rugulose, smoother anteriorly; antennæ long, very slender, similar in coloration but with more elongate joints; prothorax relatively larger, fully twice as wide as long, general outline and sculpture nearly as in *grandis*, but with a smooth obtuse elevation extending outwardly from the convex part not quite to the outer limit of the broad lateral reflexion at base, and of which there is barely a trace in *grandis*; elytra larger and more elongate, three-sevenths longer than wide, four-fifths wider than the prothorax; striæ finer but very deeply impressed, not micro-punctulate; intervals strongly convex except laterally, the two outer striæ finer and more punctulate as usual; reflexed edges not so diaphanous or pallescent as in *grandis*; legs long, pale throughout. Length 10.5 mm.; width 4.8 mm. Lake Superior (Marquette),—Sherman.....*magister* n. sp.

5—Head and prothorax pale.....6

Head black, the prothorax pale.....9

6—Body stouter in form, the coloration and general habitus almost exactly as in *grandis*. Elytra of rather more greenish hue than in *grandis*; head fully three-fourths as wide as the prothorax, finely rugulose, the eyes large and very prominent; antennæ long, about half as long as the body, fusco-testaceous, the three basal joints clearer; prothorax four-fifths wider than long, widest at the middle, the sides much rounded and strongly converging anteriorly; surface broadly reflexed at the sides, the convex discal parts finely, closely rugose, the basal peduncle conspicuous, the transverse groove only moderately deep, the median stria deep; elytra nearly a third longer than wide, twice as wide as the prothorax, the outer limit of the sinuate apical truncature rather narrowly rounded; striæ deeply impressed, fine, nearly smooth, the intervals moderately convex, densely micro-reticulate; reflexed margins diaphanous and slightly paler; under surface pale, the epipleura and abdomen piceous; tarsi as pale as the tibiæ. Length 8.5 mm.; width 4.0 mm. Texas.

majuscula Chd.

Body narrower, much less ventricose and smaller in size.....7

7—Elytra with fine micro-punctulate striæ and flat intervals, deep indigo-blue and with the side margins finely reflexed and not in the least paler in color. Under surface pale, the epipleura and abdomen black, the former feebly picescent basally; legs pale, the tarsi a little darker; head narrower than in *grandis*, with less prominent eyes, the front very finely and feebly rugulose, nearly smooth medially; antennæ almost half as long as the body, blackish, the three basal joints and basal node of the fourth pale testaceous; prothorax finely and feebly rugulose, three-fourths wider than long, more evenly arcuate at the sides and less narrowed anteriorly than in *grandis*, the margins only half as widely reflexed; basal peduncle and transverse channel almost similar; scutellum similarly rufous; elytra much narrower, almost one-half longer than wide, fully twice as wide as the prothorax, the apical truncature sinuate, more oblique

than usual, the subsutural part more posteriorly produced, the elytra divaricate at tip, the outer limit of the truncature broadly rounded; micro-reticulation rather feeble; two punctures at the third stria near basal third and apical fourth; scutellar stria rather long, feeble, parallel and close to the suture. Length 8.0 mm.; width 3.3 mm. New York (near the city). *enormis* n. sp.

Elytra with impressed striæ and more or less convex intervals, the narrow reflexed side margins abruptly pale testaceous; body smaller in size. 8

8—Elytra blue-black; under surface pale, the epipleura and abdomen more obscure rufous, piceous posteriorly; head finely but strongly rugulose, fully four-fifths as wide as the prothorax, with very prominent eyes; antennæ slender, half as long as the body, rufous, somewhat clearer basally; prothorax four-fifths wider than long, in form nearly as in *grandis*, the rounded sides very converging anteriorly, broadly reflexed, the convex parts rugulose in coarse and somewhat wavy lines; basal peduncle distinct, the transverse groove deep; scutellum small, pale, the margining parts of the stria interval and the basal margin of the elytra also pale; elytra nearly one-half longer than wide, feebly inflated posteriorly, four-fifths wider than the prothorax, the sinuous truncature as usual; striæ deeply impressed, finely punctulate, the sixth and seventh becoming gradually more approximate basally, the intervals strongly convex; seventh stria slightly, the eighth much, more feebly impressed; legs slender, pale, the tarsi not noticeably darker. Length 6.2 mm.; width 2.8 mm. Arizona. *pimalis* n. sp.

Elytra brighter steel-blue; under surface, entire legs and epipleura pale testaceous, the abdomen piceous-black; head moderate, in part feebly punctulate or subrugulose, smooth medially, having well developed and very prominent eyes, fully four-fifths as wide as the prothorax; antennæ rufous, nearly half as long as the body; prothorax much shorter than in the preceding, twice as wide as long, the sides not quite so strongly though widely and more gradually reflexed, strongly rounded, very convergent apically; basal angles feebly subprominent at tip; surface finely rugulose, the basal peduncle and groove almost similar; median stria not impressed as it is in *pimalis*, and extremely fine; elytra oblong, slightly inflated behind, about a fourth longer than wide, very nearly twice as wide as the prothorax, the feebly sinuate truncature limited externally by broadly rounded angles; striæ fine, not evidently micro-punctulate, rather deeply impressed; intervals distinctly convex, though not quite so strongly as in *grandis*, much less convex than in *pimalis*; anterior tarsi of what appears to be the male only a little less slender than those of the female and perfectly symmetric. Length 5.8–6.0 mm.; width 2.7 mm. Arizona (Tuçson),—J. F. Tucker. Five specimens. *tuckeri* n. sp.

9—Body larger, rather ventricose, pale testaceous, the head and elytra black, the latter with pronounced blue lustre; under surface pale, the epipleura rufo-piceous, the abdomen black; legs pale, the tibiæ distally gradually darker, the tarsi black or nearly so; head

large, just visibly narrower than the prothorax, with very prominent eyes; epistoma and basal part of the neck pale; front finely punctate and rugulose; antennæ slender, black, the three basal joints testaceous; prothorax three-fourths wider than long, general outline and widely reflexed margins nearly as in *grandis*; surface finely rugose; basal projection and transverse groove distinct; median stria fine, not impressed, terminating near the apex in a small foveiform dilatation; elytra nearly one-half longer than wide, inflatulate behind, fully twice as wide as the prothorax, the truncature broadly and feebly sinuate; striæ fine, very finely, subobsoletely micro-punctulate, slightly impressed (♂), scarcely so (♀); intervals feebly convex to nearly flat; side margins not paler; anterior male tarsi rather thick, with the apex of joints one and two only very slightly oblique. Length 7.2–7.6 mm.; width 3.0–3.35 mm. New Mexico (Santa Fé), Utah (Ureka) and Mexico (Tepehuanes, Durango). Three examples.....*atriceps* Lec.

Body very nearly as in *atriceps* but much smaller in size, the coloration and rather shining lustre as in that species, but with the tibiæ pale, the tarsi piceous, the neck black throughout; head not so large, evidently narrower than the prothorax, otherwise similar, the antennæ similar in coloration, but rather more slender and with the individual joints notably shorter; prothorax similar, but widest more evidently before the middle and with the sides less widely and more gradually reflexed except at base; basal parts similar, the surface finely rugulose, the median stria nearly similar but feebly impressed, not at all enlarged subapically and entire, attaining the apical margin; elytra two-fifths longer than wide, feebly inflated behind, twice as wide as the prothorax, nearly similar at tip; striæ fine, feebly but evidently micro-punctulate, the intervals nearly flat. Length 5.7–6.0 mm.; width 2.5–2.6 mm. Colorado (Boulder Co.).

nanulina n. sp.

The three species *enormis*, *pimalis* and *tuckeri* are evidently allied to *pleuritica* Lec., from Lake Superior, which was placed in typical *Lebia* by Horn, who however at the same time alluded to its strongly suggestive resemblance to *Loxopeza*. It seems to me that all four of these species should be allied more closely to *Loxopeza* than to *Lebia*, notwithstanding the fact that the peculiar anterior male tarsal characters distinguishing *Loxopeza* have become virtually obsolete. The case is similar to that of *Colpodes* in the Batesian sense, Mr. Bates, as well as Chaudoir, having assigned many species to *Colpodes*, in which the peculiar tarsal characters of the latter genus have become very nearly extinct. The species defined above as *enormis* was sent to me under the name *pleuritica* Lec., but it differs from the latter, judging by the author's description, in having no vestige of the pale elytral margins, apparently exactly

like those of *pimalis* and *tuckeri*, and in the black antennæ; *pimalis* seems to be allied to the Mexican *Loxopeza exarata* of Bates and *melanocephala* Chd.; *tuckeri* and *pimalis* are smaller than *pleuritica*; they are mutually widely distinct species and are probably equally distinct from *pleuritica*, which I have not seen; *tuckeri* must however resemble *arizonica* Schf., from the Huachuca Mts., very closely, but in *tuckeri* there are only some extremely minute punctules toward the sides of the head, the pronotum is widely reflexed at the sides, the elytral intervals rather conspicuously convex and not flat as in *arizonica*, and the abdomen is impunctate; the fourth hind tarsal joint is feebly emarginate.

Lebia Latr.

General habitus of the body, as I have had occasion to refer to in the case of the Pterostichinæ and Amarinæ, when considered in a broadly discriminative way, is the most important single structural character which can be adopted as a criterion of classification in large groups, deficient in striking structural modifications of special organs. In fact many differences in special organs, which have generally served as bases of classification, must be regarded as indecisive in the presence of an identical general habitus, and it is for this reason that I believe *Loxopeza* should include, besides the typical forms, species of the *pleuritica* type, having apparently purely Lebiid tarsi. Coming to *Lebia* itself, it is quite evident that, as comprehended in our lists, there are two types of general facies and two only; that is those with a prothorax transverse and well reflexed at the sides, recalling *Loxopeza* though more abbreviated, and those with a more convex, more basally narrowed and laterally only very narrowly reflexed prothorax, as observable in *Dianchomena abdominalis*; in *Aphelogenia* the facies is exactly as in typical *Lebia*, excepting a somewhat different type of elytral ornamentation, and even this is inconstant, as seen in *Aphelogenia guttula*, when compared with the vittate species. *Dianchomena miranda*, which differ very much in ornamentation from *D. abdominalis*, which I regard as the type of *Dianchomena*, I have not been able to study, and it is probable that it should not really form part of the genus *Dianchomena*; *scapularis*, which was placed in the latter genus by Horn, is a typical *Lebia* in its entire physi-

ognomy and especially in the very constant thoracic form of that genus.

Adding *rhodopus* Scz., from description, the following is a tabular statement of all those species of *Lebia* at present in my collection, which have uniformly black, blue or green elytra, or at least elytra devoid entirely of maculation; they are numerous and but very few of them have been hitherto described. So far as concerns certain subordinate structural characters, this division is probably artificial, but at any rate it is a practical course to pursue in this very difficult genus:

Antennæ wholly black.....	2
Antennæ not entirely black.....	17
2—Pronotum black, with pale lateral margins. Body moderately convex and ventricose, polished; head black, the elytra dark blue; entire under surface and legs piceous-black; head well developed, as wide as the prothorax, the eyes rather large and prominent, the front smooth, faintly strigilate basally; antennæ slender, more than half as long as the body; prothorax rather small and short, fully four-fifths wider than long, the sides subparallel, rounding strongly before the middle; apex feebly sinuate; base lobed and transversely grooved medially; surface minutely and feebly rugulose; sides broadly deplanato-reflexed and diaphanously pale, the scutellum piceous; elytra a fourth longer than wide, feebly inflated posteriorly, much more than twice as wide as the prothorax, the sides finely reflexed; striæ fine, not impressed, finely, very obsoletely and irregularly subpunctulate; intervals flat, the two discal punctures at the third stria; scutellar stria short. Length 4.0 mm.; width 1.8 mm. Mississippi (Vicksburg).....	<i>marginicollis</i> Dej.
Pronotum uniform in color throughout its extent, black, bluish or greenish.....	3
3—Head and prothorax deep black, without metallic color, except a feeble trace in <i>truckeensis</i>	4
Head, prothorax and elytra uniformly bluish, greenish or in part violaceous in color.....	6
4—Elytra black, with the feeblest obscure metallic lustre, polished, the under surface and legs shining, greenish-black. Head slightly narrower than the prothorax, with moderate and not very prominent eyes, the tempora rather long; front smooth, with very few fine rugulæ laterally; at the centre there is a deep foveiform puncture; antennæ half as long as the body; prothorax barely three-fourths wider than long, peculiarly narrowed anteriorly, with broadly arcuate sides, parallel in basal half, the angles right; median lobe and sulcus moderate; surface very feebly rugulose; sides rather narrowly reflexed, broadly flat and explanate at base; median stria distinct; elytra oblong, inflated behind, fully a third longer than wide, much more than twice as wide as the prothorax; striæ fine,	

nearly smooth, not quite regular, feebly impressed; intervals not quite flat, the two dorsal punctures adjoining the third stria at third and three-fourths. Length 3.8 mm.; width 1.5 mm. Rhode Island (Boston Neck).....*cynica* n. sp.

Elytra blue, sometimes with feeble suffused violaceous lustre.....5

5—Head well developed, not longer than wide, the body moderate in width and convexity, polished; under surface shining and deep black; head barely visibly narrower than the prothorax, with well developed prominent eyes; front rather strongly strigato-rugose throughout the width; antennæ more than half as long as the body; prothorax short, barely twice as wide as long, strongly but loosely vermiculato-rugose, widest at the middle, the sides thence oblique basally and broadly rounded and converging anteriorly; sides not very widely reflexed, more widely so at base and with deep shining gutter; basal lobe and sulcus distinct; apex feebly sinuate; basal angles more than right but sharply defined; scutellum black; elytra nearly a third longer than wide, feebly inflated posteriorly, barely twice as wide as the prothorax; striæ fine, nearly smooth, very feebly impressed; intervals not quite flat, the punctures as in the preceding; anterior male tarsi narrowly dilated, piceo-rufous. Length 5.0 mm.; width 2.15 mm. California (Hoopa Valley, Humboldt Co.).....*perita* n. sp.

Head rather well developed and slightly longer than wide, the eyes less prominent than in *perita*, the front smoother and having scarcely more than a few minute punctures; antennæ rather more than half as long as the body; prothorax very short, evidently wider than the head, fully twice as wide as long, widest before the middle but with the sides broadly and feebly rounded, straighter but only slightly converging basally; margins finely reflexed antieriad, rather broadly deplanate at base; median stria fine, feebly impressed; surface finely, feebly and subvermicularly sculptured; elytra a third longer than wide, barely twice as wide as the prothorax, feebly inflated behind; striæ rather fine and nearly smooth but deeply impressed, the intervals distinctly convex; two dorsal punctures small, at the same distance from base and apex; the elytra are bright steel-blue, the head and prothorax black, with just perceptible dark greenish lustre. Length 4.4 mm.; width 1.85 mm. Nevada (Reno).

A single example, taken by the writer.....*truckeensis* n. sp.

Head rather well developed, though evidently narrower than the prothorax, the eyes not quite so large as in *perita* and distinctly less prominent; front very smooth and polished, with a few feeble rugulæ near the eyes; antennæ not so long as in *perita* and slightly more slender, scarcely half as long as the body; prothorax not quite twice as wide as long, the sides subparallel to beyond the middle, thence strongly rounding to the apex, subsimilarly reflexed, the gutter not quite so deep or shining; surface nearly smooth; basal lobe and sulcus distinct; elytra narrower, two-fifths longer than wide, only feebly inflated behind, twice as wide as the prothorax; striæ very fine, not impressed, feebly micro-undulated; intervals

- flat, the dorsal punctures situated as in *perita* but smaller and feebler; under surface black, without metallic lustre, the legs faintly picescent. Length 4.0 mm.; width 1.85 mm. California (Sta. Barbara).—Dunn.....*barbaræ* n. sp.
- Head smaller and more elongate, the prothorax narrower than in any of the preceding three species, the body much smaller in size, deep black and shining, the elytra violet-blue; under surface deep greenish-black, the legs deep black; head slightly narrower than the prothorax, decidedly elongate, with well developed and moderately prominent eyes; front very smooth, with a few strigillæ near the eyes; antennæ slender, only three joints remaining in the type; prothorax two-thirds wider than long, widest before the middle, the sides rather narrowly reflexed and distinctly arcuate anteriorly more widely deplanate basally, feebly converging and straight from rather before the middle to the slightly obtuse but sharp basal angles; surface with feeble loose subvermiculate sculpture; basal lobe and furrow and median stria distinct; elytra a third longer than wide, slightly wider posteriorly, twice as wide as the prothorax; striæ fine, feebly micro-subpunctulate, the intervals very nearly flat. Length 3.75 mm.; width 1.5 mm. California (Placer Co.).—Koebele.....*castigata* n. sp.
- 6—Elytral striæ not or only very feebly impressed.....7
Elytral striæ more or less conspicuously impressed.....16
- 7—Prothorax relatively small in size and less transverse.....8
Prothorax larger, about as in *viridis*, more transverse except in *magica*, moderately reflexed toward the sides, more broadly and deeply in *bracata*.....9
- 8—Body much smaller and narrower than in *viridis*, bluish-green, sometimes violaceous on the elytra, shining; under surface and legs polished black; head moderate in size, with large and rather prominent eyes, as wide as the prothorax; front smooth; antennæ nearly three-fifths as long as the body; prothorax three-fourths wider than long, the sides subparallel, rounding anteriorly, deplanate at the basal angles, which are rather sharply marked and almost right; surface very finely, faintly or obsoletely rugulose; basal lobe and channel distinct, the median stria rather deep, entire; elytra a third longer than wide, more than twice as wide as the prothorax, slightly inflated behind; striæ somewhat fine, shallowly subimpressed and slightly irregular, the intervals nearly flat. Length 3.25–3.7 mm.; width 1.35–1.45 mm. Rhode Island (Boston Neck) and North Carolina (Southern Pines).....*adolescens* n. sp.
- Body relatively narrower, more elongate, shining, the anterior parts dark green, the elytra polished violaceous-blue; under surface and legs polished, blackish-green; head fully as long as wide, as wide as the prothorax, with prominent eyes, the surface minutely punctulate and subrugulose, smoother medially; antennæ half as long as the body; prothorax three-fourths wider than long, subparallel, rounding at the sides anteriorly and distinctly reflexed, very abruptly deplanate posteriorly; edge just visibly sinuate near the basal angles, which are as usual; surface finely and feebly subrugulose, the anterior

transverse impression fine and very feeble; basal lobe and channel distinct, the stria fine, abbreviated anteriorly; elytra longer than usual, nearly one-half longer than wide, feebly inflated posteriorly, fully twice as wide as the prothorax; striae extremely fine, unimpressed, in part subobliterated, the sutural a little stronger; intervals flat. Length 4.0 mm.; width 1.5 mm. New Mexico (Las Vegas); one, taken by Prof. Snow in Kansas, seems identical. . . *evoluta* n. sp.

- 9—Antennae somewhat thicker and shorter, less than half as long as the body, the medial joints only about one-half longer than wide; body more minute. Shining, dark blue, somewhat more greenish anteriorly; under surface shining, bluish-black; head fully as long as wide, slightly narrower than the prothorax, with rather large and prominent eyes; surface distinctly though sparsely punctate from side to side, except basally; third antennal joint much longer than the fourth; prothorax very nearly twice as wide as long, subparallel, rounded anteriorly; basal angles subprominent; margins abruptly reflexed, narrowly so anteriorly, more broadly at base; surface very finely, rather closely rugulose, the basal lobe and sulcus distinct, the stria very fine; elytra between a third and fourth longer than wide, gradually slightly wider behind, the sides rapidly rounding to the apical truncature, twice as wide as the prothorax; striae extremely fine and feeble, the intervals flat. Length 3.65 mm.; width 1.4 mm. Rhode Island (Boston Neck).

histrice n. sp.

- Antennae longer and more slender, the joints twice as long as wide or longer. 10

- 10—Sides of the prothorax rather broadly and very abruptly reflexed throughout from apex to base, as usual more broadly so basally. Upper surface shining, metallic bluish-green; under surface and femora shining, greenish-black; head not quite as wide as the prothorax, with large and prominent eyes; surface with some minute scattered punctures anteriorly, finely and feebly strigato-rugulose postero-laterad; antennae half as long as the body; prothorax four-fifths wider than long, the sides parallel, rounding in apical third, the angles sharp; basal deplaniture flexed upwardly; surface finely rugulose, at base as in the preceding, the median stria fine; elytra a third longer than wide, feebly inflated posteriorly, slightly more than twice as wide as the prothorax; striae very fine and unimpressed but distinct, the intervals flat. Length 4.2 mm.; width 2.0 mm. A single specimen found unlabeled in the Levette collection and probably from Indiana. *bracata* n. sp.

- Sides of the prothorax finely reflexed anteriorly, more broadly at base. . . 11

- 11—Prothorax wider, subequal to half the elytral width. 12

- Prothorax, though very transverse, always much less than half as wide as the elytra. 13

- 12—Form somewhat elongate, rather shining, deep cobalt-blue throughout above, the under surface and femora blackish-green, the epipleura violet-black; head well developed and with very prominent eyes, almost as wide as the prothorax, finely strigilato-rugulose, with some intermingled very minute punctures, smoother centrally;

antennæ slender, about half as long as the body, the third and fourth joints long, subequal; prothorax fully four-fifths wider than long, widest at the middle, the sides feebly converging and straight thence basally, broadly rounding anteriorly, the margins abruptly reflexed; surface with somewhat distinct vermiculate rugulosity; anterior impression obsolete, the basal sulcus and lobe conspicuous, the median stria distinctly impressed and rather deep; elytra fully two-fifths longer than wide, feebly inflated behind and scarcely more than twice as wide as the prothorax; striæ very fine, not impressed, nearly smooth, the intervals flat; abdomen sparsely hairy toward tip. Length 5.5 mm.; width 2.4 mm. Missouri (St. Louis).

magica n. sp.

Form less elongate, blue above, the anterior parts somewhat more greenish; under surface and femora dark greenish, the epipleura purplish-black; head large, with well developed and prominent eyes, though rather evidently narrower than the prothorax, finely rugose, with fine scattered punctures throughout the smoother medial parts; antennæ not so slender, compressed, nearly half as long as the body, the third joint somewhat longer than the fourth and much more slender; prothorax larger than usual, fully twice as wide as long, in general outline somewhat as in the preceding, widest at the middle; margins smooth, not quite so abruptly reflexed; surface finely and shallowly though distinctly vermiculato-rugose; angles very sharp, somewhat more than right; basal sulcus and lobe distinct, the stria fine, feebly impressed; anterior transverse impression obsolete; elytra barely a third longer than wide, only very feebly inflated posteriad, barely twice as wide as the prothorax; striæ fine, somewhat uneven, feebly impressed; intervals not quite flat; scutellar stria short, broadly, obtusely and feebly impressed. Length 5.4 mm.; width 2.22 mm. California (Hoopa Valley, Humboldt Co.).....*incitata* n. sp.

Form rather short, shining blue, the anterior parts rather more obscure or greenish; under surface polished, dark blue; legs black, the femora blue; head as wide as long, with prominent eyes, not quite though nearly as wide as the prothorax, the front smooth, minutely, loosely punctulate laterally; antennæ nearly half as long as the body; prothorax short, very transverse, twice as wide as long, widest somewhat before the middle, the sides broadly rounded and converging anteriorly, slightly converging and straighter basally, becoming very feebly sinuate before the basal angles; latero-basal deplaniture with a small tubercle near the angle; surface nearly smooth, the median stria fine and feebly impressed, not entire; elytra a third longer than wide, gradually arcuately dilated posteriorly, only just visibly more than twice as wide as the prothorax; striæ rather fine and nearly even but distinctly more impressed than in *viridis*, though less so than in *smaragdula*; abdomen with some very short sparse hairs posteriorly. Length 4.0-4.3 mm.; width 2.0 mm. New Mexico (Fort Wingate),—Woodgate.

subaffinis n. sp.

13—Prothorax more widely reflexed at the sides, the surface rather

coarsely and conspicuously, vermicularly rugulose. Moderately narrow and convex, polished, bright brassy-green, the elytra with suffused violaceous-blue reflection, except suturally toward base; under surface and femora with greenish lustre, the tibiae and tarsi black as usual; head barely visibly narrower than the prothorax, with moderate and not very prominent eyes; front smooth, finely, feebly rugulose laterally; antennae distinctly less than half as long as the body; prothorax three-fourths wider than long, the sides subparallel and nearly straight, rounded and converging before the middle; basal angles reflexed; basal lobe and sulcus distinct, the median stria fine; elytra two-fifths longer than wide, gradually inflated behind, more than twice as wide as the prothorax; striae rather fine, very feebly impressed, the intervals scarcely more than flat; dorsal foveae rather strong, near basal third and apical fourth. Length 5.2 mm.; width 2.2 mm. Rhode Island (Boston Neck).

vermiculina n. sp.

Prothorax more finely reflexed anteriorly, deplanate as usual at the sides of the base, the surface more finely, feebly and closely, subvermicularly rugulose. 14

- 14—Eyes very prominent; sides of the prothorax more rounded throughout the length. Body rather ventricose and moderately convex, shining, dark blue throughout above, the under surface and femora shining, greenish; head barely as long as wide, as wide as the prothorax, the eyes large and very prominent; surface finely rugulose, smoother medially; antennae slender, about half as long as the body; prothorax three-fourths wider than long, widest at the middle, where the sides are rather strongly rounded, converging and rounded anteriorly, converging but straight basally, the angles minutely prominent at tip, the surface reflexed at the angles; median stria fine, the transverse basal sulcus deep; elytra fully a third longer than wide, feebly inflated posteriorly, distinctly more than twice as wide as the prothorax; striae fine, rather shallow, finely and irregularly punctulate; intervals flat, the two dorsal punctures much finer than in the preceding. Length 5.3 mm.; width 2.3 mm. A single example, without indication of locality in the Levette collection, probably taken in Indiana. *prominens* n. sp.

Eyes less or but moderately prominent, the sides of the prothorax not so rounded, barely visibly converging in about basal half, the basal angles less reflexed than in the two preceding. 15

- 15—Form moderately stout and convex, shining, bright green, sometimes blue or greenish-blue; under surface shining, greenish; head barely visibly narrower than the prothorax, with rather prominent eyes; front with fine punctures and rugulosity, smooth medially; antennae half as long as the body; prothorax three-fourths wider than long, the sides moderately converging and broadly rounded anteriorly; surface rather convex, finely, vermiculately rugulose, the stria fine; basal sulcus deep; elytra a third longer than wide, moderately inflated behind the middle, more than twice as wide as the prothorax; striae rather fine, not distinctly impressed and more or less evidently, finely punctulate, the two dorsal punctures moderate and in the

usual position. Length 3.7-5.0 mm.; width 1.7-2.3 mm. New York (Lake Champlain), Lake Superior (Marquette), New Jersey, Pennsylvania and Kansas.....*viridis* Say

Form slightly narrower than in *viridis*, shining, obscure blue, the head and prothorax sometimes slightly æneous; under surface and femora very dark blue and shining; head relatively smaller, with more moderate and less prominent eyes, much narrower than the prothorax, feebly rugulose and minutely punctulate, smooth medially; antennæ slender, half as long as the body; prothorax very short, fully twice as wide as long, the sides broadly rounded and converging anteriorly, feebly converging and nearly straight in about basal half, the angles sharply marked though scarcely prominent; rugulosity confusedly strigilliform, very fine, rather close-set, the median stria fine, feebly impressed, not entire; anterior impression traceable but very close to the margin; elytra relatively longer than in *viridis*, two-fifths longer than wide, barely more than twice as wide as the prothorax, moderately inflated posteriorly; striæ very fine and shallow, not punctulate, the intervals flat. Length 4.0-4.85 mm.; width 1.9-2.2 mm. Arizona (Tucson),—Tucker.

planifera n. sp.

Form still narrower, smaller in size, polished, deep cobalt-blue, the anterior parts more greenish, the pronotum at each side discally, and also the elytra, with some violaceous lustre; under surface and femora shining, rather dark but vivid bluish-metallic; head narrow, distinctly elongate, evidently narrower than the prothorax, the eyes moderate in size and convexity; surface smooth, the lateral punctures and rugulosity scarcely at all visible; antennæ slender, fully half as long as the body; prothorax rather small, four-fifths wider than long, the sides broadly arcuate and moderately converging anteriorly, very slightly converging and straight posteriorly, the angles slightly prominent at tip; latero-basal deplanation with a small tubercle near the angle; median stria fine but impressed; rugulosity very feeble and not close-set; elytra a third longer than wide, feebly, arcuately inflated posteriorly, distinctly more than twice as wide as the prothorax; striæ fine, just visibly impressed, the intervals virtually flat; dorsal punctures distinct, near basal and apical third. Length 4.5 mm.; width 1.55 mm. Mexico (Colonia Garcia, Sierra Madre Mts., Chihuahua),—Townsend.

**cobaltina* n. sp.

16—Body rather elongate, moderately convex, shining, pale and bright green throughout above, the under surface black, with greenish lustre; head moderate, with rather large and moderately prominent eyes, about as wide as the prothorax, nearly smooth, the rugulosity laterad very fine and feeble; antennæ slender, somewhat more than half as long as the body; prothorax small, two-thirds wider than long, parallel, with somewhat feebly arcuate sides, becoming slightly sinuate near the hind angles, the margins well reflexed; rugulosity fine and feeble; median stria distinct and impressed, finer and obsolescent apically; elytra long, fully two-fifths longer than wide, gradually slightly inflated posteriorly, much more than

twice as wide as the prothorax; striæ not very fine and slightly uneven, the intervals evidently though not strongly convex, the dorsal punctures distinct, near basal third and apical fourth. Length 4.2-4.5 mm.; width 1.8-2.0 mm. Rhode Island, Indiana and Texas (Austin).....*smaragdula* Dej.

Body slightly broader, the head relatively not quite so large, shining, bright green, the anterior parts sometimes subæneous and the elytra partially bluish; under surface with dark bluish-green lustre; head slightly elongate, evidently narrower than the prothorax, with large but only slightly prominent eyes; front minutely, sparsely punctulate, finely strigilate postero-laterad; antennæ half as long as the body, slender; prothorax relatively a little larger than in the preceding and nearly three-fourths wider than long, almost similar in form and sculpture, but with the median line finer; elytra a third longer than wide, oblong, only feebly dilated posteriorly and barely more than twice as wide as the prothorax; striæ much less fine than in *viridis*, feebly impressed and, at least toward the sides, distinctly punctulate; intervals nearly flat; dorsal punctures distinct. Length 4.5 mm.; width 2.0 mm. Arizona (Tuçson),—Tucker.....*papago* n. sp.

A—Similar to *papago* but with the head, though slightly elongate, scarcely visibly narrower than the prothorax, the latter not quite so transverse; elytra narrower and more elongate, fully two-fifths longer than wide, the striæ stronger, more impressed, more punctate and irregular, the intervals feebly convex and more strongly micro-reticulate than usual; abdomen similarly with very small sparse hairs. Length 4.0 mm.; width 1.8 mm. Arizona (the locality unrecorded, but probably from near the southern boundary).....*trajecta* n. subsp.

Body narrower than in either of the preceding species or in *trajecta*, very shining and deep cobalt-blue above, the head and pronotum more greenish; under surface with obscure bluish-green lustre; head slightly elongate, with large and prominent eyes, fully as wide as the prothorax, nearly smooth; antennæ slender, fully half as long as the body; prothorax small, two-thirds wider than long, the sides a little more converging before and behind the middle than in either *smaragdula* or *papago*, similarly reflexed; rugulosity extremely fine and faint, the median stria fine; elytra two-fifths longer than wide, evidently inflated posteriorly, much more than twice as wide as the prothorax; striæ not very fine, irregularly subpunctulate and distinctly impressed; intervals very obviously convex, the dorsal punctures moderate. Length 3.8 mm.; width 1.65 mm. Minnesota (Duluth).....*duluthiana* n. sp.

17—Antennæ black, with the third joint pale; legs piceous to flavate... 18
Antennæ black; joints one, or one to three, paler..... 24

18—Body moderate in size..... 19
Body very small..... 20

19—Head and prothorax subopaque, greenish or bluish black, the elytra shining, blue or greenish-blue; head large, wider than the prothorax; antennæ more than half as long as the body, the outer

joints stout, the third and base of the fourth testaceous; prothorax small, very little rounded at the sides, subsinuate before the basal angles, but feebly sculptured; elytra feebly alutaceous; striæ very fine, the intervals subconvex; legs bright rufo-testaceous, the tarsi blackish. Length 4.5 mm. Florida (Tampa). Characters quoted from the original description. **rhodopus** Scz.

Head and prothorax moderately shining, black, slightly bronzed, the elytra black, with feebly subæneous lustre, strongly shining; under surface black, the epipleura piceous, the legs brownish-flavate; head rather elongate, barely as wide as the prothorax, the eyes moderate in size and prominence, the tempora not very rapidly converging to the neck; surface micro-reticulate, feebly rugulose, smoother centrally; antennæ distinctly more than half as long as the body, not very slender, the third joint and base of the fourth testaceous; prothorax small, one-half wider than long, parallel, the sides rather feebly, subevenly arcuate and somewhat narrowly reflexed, feebly sinuate at the rather sharp and subprominent basal angles; latero-basal deplaniture narrower than usual; surface finely, sparsely punctulate and subrugulose, the median line rather broadly impressed; elytra two-fifths longer than wide, feebly inflated behind the middle, nearly two and one-half times as wide as the prothorax; striæ not very fine, widely and rather deeply impressed, the intervals distinctly convex; dorsal punctures rather small. Length 4.2 mm.; width 1.9 mm. District of Columbia. **tertiaria** n. sp.

20—Elytral striæ distinctly impressed. 21

Elytral striæ very fine, not at all impressed. 22

21—Antennæ notably elongate, much more than half as long as the body, shining, deep black, the pronotum subopaque; under surface very shining, black, the epipleura piceous, the legs pale flavate, with very slender blackish tarsi; head slightly elongate, equal in width to the prothorax, the eyes very moderate in size and prominence, the tempora rather long, the front nearly smooth, convex; antennæ black, the third joint and base of the fourth testaceous; prothorax small, one-half wider than long, parallel, the sides very moderately arcuate and very finely reflexed, gradually feebly and broadly sinuate posteriorly, the angles sharp; latero-basal deplaniture abrupt and triangular; surface minutely and feebly punctulate, the median stria fine, subentire; elytra a third longer than wide, gradually arcuately inflated behind, much more than twice as wide as the prothorax; striæ rather fine, irregular, impressed, the intervals evidently convex. Length 3.3 mm.; width 1.4 mm. Louisiana (Alexandria). **ludoviciana** n. sp.

Antennæ similarly slender and moderately compressed, but not quite so long, only a little more than half as long as the body, the pale third joint shorter; coloration nearly as in the preceding, the upper surface more æneous and the under surface and legs piceous; head as wide as the prothorax, sometimes apparently a little wider, rather elongate, rhomboidal, the eyes not large and moderately prominent; surface nearly smooth; prothorax small, one-half wider than long, nearly as in the preceding, less opaque, the latero-basal

deplaniture not so abrupt and merging gradually into the reflexed margins; elytra between a fourth and third longer than wide, moderately inflated posteriorly, two and one-half times as wide as the prothorax; striæ finer, more regular, less impressed, the intervals just visibly convex, less so that in the preceding; tarsi very slender, the fourth joint similarly narrowly bilobed. Length 2.45-3.0 mm.; width 1.1-1.35 mm. Rhode Island and Pennsylvania (near Philadelphia).....*pumila* Dej.

- 22—Elytra quadrate, barely perceptibly longer than wide. Body ventricose, moderately convex, deep black, the elytra polished, with very feeble greenish lustre, the anterior parts feebly alutaceous and without trace of metallic lustre; under surface shining, black, the legs very pale brownish-flavate, the tarsi darker and very slender; head rhomboidal, with rather prominent but very moderate eyes, the surface convex and nearly smooth; antennæ somewhat slender, more than half as long as the body, the pale third joint notably elongate, relatively longer than in *pumila*; prothorax small, in almost every respect as in *pumila*, the transverse basal sulcus angulate at the middle, the impressed stria extending from the angle to the obsolescent transverse anterior impression; elytra scarcely at all inflated posteriorly, with the sides broadly arcuate, much more than twice as wide as the prothorax; striæ moderately fine, somewhat irregular, the intervals virtually flat. Length 2.8 mm.; width 1.25 mm. North Carolina (Southern Pines),—Manee.

quadrata n. sp.

Elytra elongate, a fourth to third longer than wide.....23

- 23—Antennæ longer, slender, scarcely at all compressed, more than half as long as the body, the latter shining, black, faintly subæneous, the anterior parts not distinctly alutaceous; under surface black, the legs piceous; head rhomboidal, equal in width to the prothorax, the eyes prominent but rather small, only slightly longer than the gradually converging tempora behind them; third antennal joint piceo-testaceous; front nearly smooth; anterior superciliary puncture notably large; prothorax almost as in the preceding species, but with the anterior transverse impression more distinct, angulate at the middle, the median stria—extending thence to the angulation of the basal sulcus—rather deeply impressed; elytra a third longer than wide, gradually arcuately subinflated posteriorly, much more than twice as wide as the prothorax, the color faintly picescent; striæ extremely fine and feeble, in part almost obliterated, the intervals flat; dorsal punctures small. Length 3.0 mm.; width 1.25 mm. Northern Illinois.....*illini* n. sp.

- Antennæ shorter, scarcely half as long as the body and very stout, only feebly compressed; body black, the anterior parts feebly alutaceous, the elytra shining and very feebly subæneous; under surface black, with faintly picescent epipleura; legs dark piceous; head rhomboidal, with rather prominent though very moderate eyes, which are scarcely longer than the tempora, not quite as wide as the prothorax; surface strongly micro-reticulate, the anterior superciliary puncture rather large; third antennal joint pale flavo-testaceous;

- prothorax somewhat shorter than usual in this section, rather more than one-half wider than long, the parallel and feebly arcuate sides becoming broadly and rather deeply sinuate basally, the angles sharp and prominent, the other characters as in *quadrata*; elytra a fourth longer than wide, widest and with the sides more arcuate near apical third, much more than twice as wide as the prothorax; striæ very fine, sometimes barely visible, the intervals flat; dorsal punctures fine. Length 3.2 mm.; width 1.3 mm. Lake Superior (Bayfield, Wisconsin).—Wickham. *frugalis* n. sp.
- 24—Under surface and legs in great part pale. 25
Under surface and legs black or nearly so, the prosternum sometimes red in *cyani pennis*. 27
- 25—Thoracic sides with a short deep abrupt sinus before the basal angles, the sides of the base oblique and rounded. Polished, the head obscure green, the prothorax rufous, the elytra bright green; under surface pale testaceous, the epipleura black; femora testaceous, blackish at apex; tibiæ more obscure, rufous, the tips and the tarsi blackish; head four-fifths as wide as the prothorax, with large and somewhat prominent eyes and short, strongly converging tempora, the front finely, feebly punctulate and rugulose, smooth medially; antennæ slender, somewhat more than half as long as the body, the first three joints testaceous, the remainder black; prothorax two-thirds wider than long, the sides evenly, subcircularly rounded to the basal sinus and rather widely reflexed; basal lobe and impression well marked; surface finely, feebly and not closely rugulose, the median stria fine, feebly impressed; elytra oblong, feebly inflated behind, slightly over a third longer than wide, barely twice as wide as the prothorax; striæ feeble, composed of unimpressed series of small punctures; intervals flat, the two dorsal punctures remotely separated and moderate; tarsi notably stout. Length 5.5 mm.; width 2.6 mm. Indiana. *abrupta* n. sp.
- Thoracic sides not sinuate at the basal angles, which however are minutely prominent as a rule; prothorax much shorter and more transverse, the base transverse at the sides. 26
- 26—Coloration and lustre nearly as in the preceding; head but little more than three-fourths as wide as the prothorax, the eyes prominent, nearly as in *abrupta*, the front finely punctulate, smooth medially; antennæ similarly long, the first two joints pale testaceous, the third not quite so pale, the remainder black; prothorax shorter, very nearly twice as wide as long, the sides subevenly rounded and well reflexed, straighter basally, gradually more widely reflexed from apex to base; basal lobe strong, the sulcus deep, the surface finely and more closely rugulose, the median stria very fine; elytra narrower, two-fifths longer than wide, fully twice as wide as the prothorax, rather rapidly arcuately narrowed apically; striæ very fine and feeble, less distinctly punctured than in the preceding, the flat intervals less evidently micro-reticulate, the dorsal punctures similar; tarsi more slender. Length 5.0–5.8 mm.; width 2.5 mm. Rhode Island (Boston Neck) to Indiana. *viridipennis* Dej.
- A—Similar in almost every way to *viridipennis* but with the pro-

thorax even shorter, twice as wide as long, differing in that the front has, besides the small punctures, two deep elongate approximate and anteriorly somewhat diverging foveæ on a line through the middle of the eyes; antennæ with the first three joints pale flavo-testaceous; elytra still more shining, bluish-green; tarsi slender. Length (σ^7) 5.7 mm.; width 2.5 mm. Iowa (Keokuk).

frontalis n. subsp.

Coloration differing somewhat, the head black; prothorax pale testaceous, the elytra having strong bluish-violaceous lustre and very shining; under surface and legs nearly as in *viridipennis*; body narrower; head finely, sparsely punctulate laterally, smooth medially, nearly four-fifths as wide as the prothorax, the eyes well developed and very prominent; antennæ slender, black, the first joint testaceous, the second piceous; prothorax four-fifths wider than long, widest somewhat before the middle, the sides rounded, oblique and straight basally, strongly reflexed; basal lobe and sulcus conspicuous, the median stria extremely fine; rugulosity very fine, not close-set; elytra fully two-fifths longer than wide, not quite twice as wide as the prothorax; striæ extremely fine and subobliterated, the serial punctures fine and feeble; intervals flat; sutural stria distinct apically; tarsi rather thick, the posterior long and slender. Length 5.5 mm.; width 2.35 mm. Rhode Island (Boston Neck).....*rhodeana* n. sp.

27—Form rather stout and feebly convex, polished, deep black, the elytra violaceous-blue, the prothorax frequently red throughout above and beneath; under surface and legs black; head not as long as wide, with very prominent eyes, nearly four-fifths as wide as the prothorax, the front sparsely and irregularly punctulate and subrugulose; antennæ slender, more than half as long as the body, black, the two basal joints piceous to nearly black; prothorax short, fully twice as wide as long (φ), a little less (σ^7), widest before the middle, the moderately arcuate sides broadly reflexed, straight basally, the angles sharply marked but not prominent; surface distinctly but not densely rugulose, the fine median stria impressed; elytra a third longer than wide, only slightly inflated behind, distinctly less than twice as wide as the prothorax; striæ fine, feebly subpunctulate, the intervals flat, the dorsal punctures small, near anterior and posterior third. Length 5.7–6.2 mm.; width 2.5–2.65 mm. California (Los Angeles and San Diego) and Arizona. [*L. ruficollis* Lec.].....*cyanipennis* Dej.

Form more abbreviated, much smaller in size, rather shining, deep black, the elytra with very obscure greenish lustre; under surface black, the legs testaceo-piceous; head fully as long as wide, rather more than three-fourths as wide as the prothorax, with moderate though prominent eyes; front with sparse but distinct punctures; antennæ not very slender, somewhat more than half as long as the body, black, the first two joints dark rufous; prothorax three-fourths to four-fifths wider than long, widest before the middle, the sides strongly rounded and narrowly reflexed, broadly so at the slightly prominent reflexed basal angles, before which there is a

moderate sinus; surface sparsely, finely punctulate and also with slight rugulosity, the median line fine; elytra a fourth longer than wide, only feebly dilated behind, distinctly less than twice as wide as the prothorax; striæ very fine, not distinctly punctulate; intervals flat, with remote and very minute punctulation, the dorsal punctures at basal, and behind apical, third. Length 4.6–5.0 mm.; width 2.2 mm. California (Lake Tahoe). Three examples.

tahoensis n. sp.

The entirely red or black prothorax of *cyanipennis* Dej., is analogous to a character well known in the longicorn *Hapalosalia sphaericollis* Say. *Lebia ruficollis*, of LeConte, does not differ from typical *cyanipennis* in any character whatever, except the red prothorax, and I have examples with both red and black prothorax apparently taken together near Los Angeles; sex seems to have nothing to do with this remarkable dichromatism and there is undoubtedly but one species involved. *Lebia mæsta* Lec. (L. Sup. p. 203), is a species evidently different from *viridis*; it is black, with subæneous lustre, the anterior thoracic impression deep, and the head is longer and narrower than in *viridis*; *mæsta* Lec., and *rhodopus* Scz., are inscribed as varieties of *viridis* in the Henshaw list, but they are both fully valid species. The species described above under the name *tertiaria* is evidently closely allied to *maculicornis* Lec., from Georgia, which has been erroneously suppressed as a race of *pumila*; it is a much larger species than *pumila* and I could not fail to identify it as *maculicornis*, if it were not that the author describes the elytra as obscurely viridescent and finely striate; in *tertiaria* there is no trace of viridescence and the elytral striæ are notably deep; perhaps, however, a conservative course would be to reinstate *maculicornis* as a fully valid species, with *tertiaria* as a subspecies. *Rhodopus* Scz., is also a species closely allied to *maculicornis*.

The following list comprises all the non-vittate species of *Lebia*, having maculate elytra, that are in my collection at present; in some cases, such as *guttula*, they belong to the inadmissible genus *Aphelogenia* of Chaudoir.

Elytra dark blue, crossed before the middle by a broad rufo-flavate fascia, which is emarginate at the suture both before and behind, the apex also rufo-flavate from side to side; head blue-black, the prothorax rufo-flavate; under surface and legs very pale, the tarsi darker, the head black and finely punctate throughout; prothorax

- three-fifths wider than long, much wider than the head; elytral striae very fine, the intervals perfectly flat. Length 5.2–5.8 mm.; width 2.4–2.7 mm. New Jersey and Indiana. **pulchella** Dej.
- Elytra never having a trace of metallic coloration; maculation more irregular, less fasciiform. 2
- 2—Head with deeply strigilliform sculpture throughout. 3
- Head in great part smooth or sparsely punctured. 4
- 3—Form moderately stout, rather convex, shining; head black; prothorax pale testaceous, the elytra black, flavate at the sides in anterior half, this area extending obliquely inward with recurved lobiform tip reaching the first stria and with posterior limit well behind the middle; apex transversely flavate, connected with the anterior flavate area by a narrow pale side margin; humeral black area quadrate; under surface and legs throughout pale, the head black, the abdomen brownish at tip; head large, with very prominent eyes, almost as wide as the prothorax; antennae slender, fuscous, the three and one-half basal joints pale; prothorax nearly twice as wide as long, finely, strongly rugulose, broadly reflexed at the sides; elytra between a third and fourth longer than wide, gradually dilated behind, scarcely twice as wide as the prothorax, the striae deeply impressed with convex intervals. Length 5.5 mm.; width 2.35 mm. Texas (Brownsville).—Wickham. **anchora** Chev.
- Form rather stout, shining, the size very variable; coloration as in the preceding, except that the flavate antero-lateral area of the elytra is smaller, not extending quite to the middle of the length, extending basally in similar manner to the fourth stria, but with the oblique inner prolongation small, extending inward to the second stria and posteriorly to about the middle, the flavate area having a fuscous spot at the humerus, the margin finely flavate posteriorly to the transverse apical flavate area; head not quite so large as in *anchora*, with very prominent eyes, slightly narrower than the prothorax; antennae similarly colored, very slender; prothorax twice as wide as long, moderately rounded and broadly reflexed at the sides; median stria very fine, usually a little deeper at apex; surface finely, closely and strongly rugulose; elytra fully a third longer than wide, otherwise nearly as in *anchora*. Length 4.4–6.0 mm.; width 1.9–2.8 mm. Indiana and Mississippi (Vicksburg). Twelve specimens. **appendiculata** Chd.
- Form not quite so stout and sensibly smaller, though similarly varying greatly in size, similar in general coloration, except that the elytra are more completely black, there being a narrow flavate spot involving the fifth and sixth intervals from base to slightly behind basal fourth, and sometimes almost obsolete—*marginella*; lateral margins always finely flavate throughout the length, the apical flavate fascia slightly dilated inwardly; head with remarkably large and prominent eyes, barely narrower than the prothorax; antennae slender, fuscous, the first three and one-half to four joints pale flavate; prothorax four-fifths wider than long, pale testaceous as in the two preceding and similarly rounded and broadly reflexed at the sides; rugulosity fine, close-set; median stria very fine, often

foveiform at apex; elytra nearly a third longer than wide, wider posteriorly as usual, twice as wide as the prothorax; striæ fine, distinctly impressed except apically, the seventh extremely fine and unimpressed or obsolete as in the two preceding, the intervals moderately convex, flatter toward apex. Length 4.3–5.8 mm.; width 1.75–2.6 mm. Wisconsin, Indiana, Mississippi and Louisiana. Abundant. [*L. marginella* Dej.]..... *analis* Dej.

- 4—Head with fine but deep sparse punctures. Body very small in size, shining, piceous, the head black; prothorax with pale side margins; elytra each with an irregular discal pale spot, somewhat oblique and before the middle, the tips pale, more broadly so internally; under surface and legs pale, the head dark; head four-fifths as wide as the prothorax, with rather large and prominent eyes, the tempora moderately converging; antennæ fuscous, clearer basally, half as long as the body; prothorax three-fifths wider than long, widest before the middle, with very moderately rounded and widely reflexed sides, briefly and feebly sinuate at the distinct hind angles; rugulosity fine, sparse and inconspicuous; median line distinct but not attaining the apex; elytra one-half longer than wide, two-thirds wider than the prothorax, parallel, rounding at the sides apically; striæ relatively rather coarse, irregularly subpunctate, the intervals feebly convex, perfectly flat apically, where the striæ become very fine. Length 3.0 mm.; width 1.5 mm. Virginia....*lobulata* Lec.
- Head not at all punctured, smooth, sometimes slightly rugulose laterally.....5

- 5—Head small, elongate, about two-thirds as wide as the prothorax...6
- Head larger, not elongate and with more prominent eyes.....7

- 6—Body not stout, moderately convex, shining, black, the prothorax more piceous, with the broadly reflexed margins pale; elytra each with a discal pale spot before the middle, never attaining the sides or base, and a smaller rounded pale spot near apex and adjoining the first stria; under surface and legs pale, the prosternum and abdomen piceous; head nearly smooth throughout, the eyes only moderately prominent, the anterior superciliary puncture notably large; antennæ slender, rather more than half as long as the body, fuscous, the first three joints paler; prothorax two-thirds wider than long, widest before the middle, the sides moderately arcuate, straight basally, the angles minutely and bluntly subprominent; surface nearly smooth, the rugulæ fine, sparse and faint; median line fine, impressed, not extending anteriorly beyond the angle of the fine and feeble transverse impression; elytra fully a third longer than wide, gradually inflated posteriorly, barely twice as wide as the prothorax; striæ coarsely impressed, uneven or feebly punctate; intervals moderately convex. Length 4.0–5.0 mm.; width 1.7–2.0 mm. Rhode Island to Indiana. Abundant. [*L. frigida* Chd.].....*ornata* Say

Body broader than in *ornata* and with much more developed pale elytral maculæ, shining; head black, the prothorax pale flavo-testaceous, with a median piceous cloud, the elytra black, each with a very large inwardly inflated spot extending slightly behind the middle,

gradually attenuated to the base and reaching the side margin in second fourth of the length; side margins finely pale as in *ornata* and extending to the transverse apical fascia, which is abruptly enlarged toward the suture, the large anterior pale area extending to and along the first stria; under surface and legs evenly very pale flavo-testaceous throughout, the head black; head nearly smooth, almost three-fourths as wide as the prothorax, with large but only moderately prominent eyes; antennæ much more than half as long as the body, fuscous, gradually paler basally; prothorax almost as in *ornata* but shorter and broader, very nearly twice as wide as long; elytra barely over a fourth longer than wide, more parallel and less posteriorly inflated than in *ornata*, distinctly less than twice as wide as the prothorax, the striation nearly as in *ornata*. Length 4.8 mm.; width 2.1 mm. New York.....

.....*reperta* n. sp.

7—Apical pale fascia of the elytra widest suturally.....8

Apical pale fascia widest outside of the middle of the width.....11

8—Anterior pale spots of the elytra not extending posteriorly behind the middle.....9

Anterior pale spots extending behind the middle of the length. Sub-tropical regions.....10

9—Prothorax short, twice as wide as long, very shining throughout; head deep black above and below; prothorax pale brownish-flavate, feebly clouded centrally, the elytra piceous-black, with narrow pale side margins as usual in this section, each with an anterior spot in the form of an inverted comma, extending from the middle and, in attenuated form, attaining the middle of the base, extending internally to the second stria and, externally, united for a short distance with the lateral margin; apical fascia broad in more than inner half, thence narrow to the pale margin; under surface and legs very pale; head smooth and polished, with the anterior superciliary puncture conspicuous, not quite four-fifths as wide as the prothorax, with very prominent eyes; antennæ half as long as the body, pale and uniform testaceous throughout; prothorax widest before the middle, with rather strongly rounded and widely reflexed sides, becoming feebly sinuate before the sharp angles; surface nearly smooth, the fine sparse rugulæ scarcely discoverable, the stria fine, not entire; elytra a third longer than wide, inflated posteriorly, not quite twice as wide as the prothorax, the striae coarsely impressed and punctate, fine, feeble and smooth apically, the intervals as in *ornata*. Length 3.6 mm.; width 1.5 mm. Virginia.

.....*virginica* n. sp.

A—Nearly as in *virginica* throughout, except that the antennæ are slightly more elongate, the prothorax still a trifle shorter and more transverse, the anterior discal pale spot of the elytra not prolonged to the base—or posteriorly quite to the middle of the length—attaining the first stria and, externally, separated from the pale margin by nearly two intervals, the inner enlargement of the fine apical fascia small and quadrate. Length 4.0 mm.;

width 1.6 mm. North Carolina (Asheville). A single example, taken by the writer as in the case of *virginica*.

ashevillensis n. subsp.

Prothorax much less abbreviated and only two-thirds wider than long; lustre shining; color deep black, the pronotum piceous-black, with abrupt pale and broadly reflexed margins; elytra black, marked with pale areas almost exactly as in *virginica*; legs pale, the prosternum piceous and the head black; head four-fifths as wide as the prothorax, with well developed prominent eyes, the surface smooth, the anterior superciliary puncture very large; antennæ pale testaceous throughout, more than half as long as the body and much more slender than in *virginica*; prothorax in general outline and sculpture nearly similar, much less transverse and with the fine rugulosity more visible; elytra fully a third longer than wide, gradually very moderately inflated behind, less than twice as wide as the prothorax, the striation nearly as in the two preceding; two dorsal punctures adjoining as usual the third stria and at basal third and apical fourth; epipleura very pale as in *virginica* and *ashevillensis*. Length 3.9–4.2 mm.; width 1.5–1.6 mm. Mississippi (Vicksburg) and Illinois. Five examples. *fluviatilis* n. sp.

10—Form rather narrow and elongate, shining, the head rufo-piceous; prothorax pale flavate throughout, the elytra black, each with a large oblique flavate spot well separated from the base, lobularly prolonged internally to well behind the middle, extending internally to the first stria and, externally, separated as a rule from the pale margin by about the width of an interval, rarely uniting with the side margin for some distance; apical pale fascia broadened in about inner half; under surface and legs, excepting the head, very pale; head large, only very little narrower than the prothorax, with large and very prominent eyes; surface smooth; antennæ rather more than half as long as the body, pale testaceous; prothorax four-fifths as wide as the elytra, widest before the middle; sides rather strongly rounded, broadly reflexed, becoming straight basally, the angles minutely and acutely prominent; rugulæ fine, faint and not dense, the stria fine, more or less impressed; elytra two-fifths longer than wide, gradually feebly inflated behind, a little less than twice as wide as the prothorax, the striæ impressed, subpunctate, finer and smoother apically, the seventh obsolete as usual. Length 4.7–5.0 mm.; width 1.8–2.1 mm. Texas (Brownsville),—Wickham. Seven specimens. *serpentina* n. sp.

Form still more slender, smaller in size, shining; head black, the prothorax and elytra pale flavate, the latter black in a small angulate scutellar spot and a transverse fascia behind the middle, which is not wider suturally than the inner part of the apical fascia and connected with the scutellar spot by a fine vitta along the first interval; lateral margins along the ends of the fascia pale, no other dark markings visible; under surface as in the preceding; head smaller than in the preceding, though with equally prominent eyes, five-sixths as wide as the prothorax, smooth; antennæ much more than half as long as the body, fusco-testaceous, clearer basally;

prothorax throughout nearly as in the preceding but not quite so large; elytra two-fifths longer than wide, feebly inflated posteriorly, nearly twice as wide as the prothorax; striæ smoother, finer and not quite so impressed as in the preceding. Length 4.2 mm.; width 1.65 mm. Texas (Brownsville),—Wickham. Two examples.

esurialis n. sp.

11—Apical pale area of the elytra usually not joining the anterior pale areas; body much larger in size. Atlantic regions. 12

Apical pale area usually joining the anterior—less certainly in *metuens*; body much smaller in size. Pacific and Sonoran regions. 14

12—Anterior pale spots of the elytra separated from the apical fascia by a very broad black fascia. Body moderate in size and convexity, rather shining, black, the pronotum rather less deeply and with the broadly reflexed margins abruptly pale; elytra each with a broad comma-like pale spot, from the middle, attenuate and evenescent at base, extending internally to the first stria and separated from the sides by about two black intervals, the scutellar black area transversely subquadrate; pale sides limited to the reflexed margin; pale apical fascia well developed; head nearly as wide as the prothorax, with moderate but very prominent eyes; surface smooth, very finely and faintly subrugulose near the eyes; antennæ slender, fully half as long as the body, pale testaceous throughout; prothorax moderate, not quite though nearly twice as wide as long, the sides broadly rounded, the hind angles minutely and bluntly subprominent; rugulosity usually distinct; median line fine, attaining the apical margin; elytra a fourth to third longer than wide, oblong, barely inflated behind, twice as wide as the prothorax, with fine, smooth and slightly impressed striæ, the intervals evidently convex; dorsal punctures at basal and apical fourth, they being unusually widely separated; under surface and legs pale. Length 4.3–5.0 mm.; width 2.0–2.2 mm. Lake Superior (Marquette) and Rhode Island (Boston Neck). Four examples.

canonica n. sp.

Anterior pale spots very narrowly separated from the broad apical pale fascia, sometimes connected as in the typical *fuscata*. 13

13—Body of comparatively large size, moderately convex, shining, the pronotum less so, black, the pronotum pale at the sides in somewhat more than the broadly reflexed margins; elytra each with a large basally narrowed spot, extending from behind the middle to the base, attaining the first stria internally and separated from the fine pale margin by about two dark intervals, the apex broadly pale, this area suturally emarginate, and separated very narrowly and imperfectly from the anterior spots, the submarginal black vitta attaining apical fourth; under surface and legs pale; head four-fifths as wide as the prothorax, with large and very prominent eyes, the surface smooth; antennæ slender, not quite half as long as the body, pale brownish-testaceous, clearer basally; prothorax fully twice as wide as long, the rounded and broadly reflexed sides very converging at apex, the hind angles sharply marked; rugulosity

fine and not dense but distinct, the median stria fine; elytra about a third longer than wide, gradually and distinctly inflated behind, barely twice as wide as the prothorax, the striae rather fine but evidently punctate, impressed, the intervals broadly convex; dorsal punctures a little behind basal, and before apical, fourth. Length 6.2 mm.; width 2.7 mm. Illinois.....*fuscata* Dej.

Body not quite so large, relatively broader, rather convex, shining; head rufo-testaceous, the pronotum a little paler; elytra black, each with a large oval spot extending from behind the middle to basal sixth or seventh, internally to the first stria and, externally, separated from the pale margin by a vitta of about two intervals, extending to the apical fascia, which is broad, emarginate on the suture and narrowly but clearly separated from the anterior spots; under surface and legs pale; head five-sixths as wide as the prothorax, with large and very prominent eyes; surface nearly smooth, usually with two small approximate foveae on a transverse line through the anterior part of the eyes; antennae not very slender, shorter than in the preceding, less than half as long as the body and pale flavo-testaceous in color; prothorax fully twice as wide as long, the rounded and well reflexed sides very converging apically, the hind angles rather blunt at tip; rugulosity rather fine, not dense; median stria fine but deep, entire; elytra only about a fifth longer than wide, gradually and distinctly inflated behind, evidently less than twice as wide as the prothorax, the striae impressed, nearly smooth, the intervals somewhat strongly convex; dorsal punctures very small, at basal third and apical fourth. Length 5.0-5.5 mm.; width 2.5-2.65 mm. Texas (Brownsville),—Wickham.

rhodope Bates

- 14—Apical pale areas of the elytra separated narrowly from the anterior pale areas, or else joining by a very narrow isthmus; body smaller in size. Shining, black, the pronotum piceous to black, with the moderately reflexed margins abruptly pale; elytra pale, with a narrow scutellar area connected along the suture with a large oval posterior sutural spot, and also with a frequently isolated smaller external spot just behind the middle, black, the apices behind the posterior pale area infuscate; under surface piceous, the legs and epipleura pale flavate, the tarsi not darker; head not quite as wide as the prothorax, shorter than wide, with moderate though very prominent eyes; surface feebly rugulose laterally, especially at base; antennae slender, half as long as the body, pale flavo-testaceous; prothorax twice as wide as long to a little less, the moderately rounded sides very feebly sinuate just before the sharp basal angles; surface nearly smooth, the faint rugulosity scarcely discoverable; median stria fine, entire between the basal transverse sulcus and the apical margin; elytra a fourth longer than wide, slightly dilated behind the middle, twice as wide as the prothorax or less; striae fine, barely at all impressed, feebly and irregularly punctulate, the intervals not quite flat; dorsal punctures small, at basal third and apical fourth. Length 3.3-3.6 mm.; width 1.4-1.65 mm. California (the locality unrecorded).....*metuens* n. sp.

Apical pale areas joining the anterior in a broad and constant isthmus, always isolating the submarginal small black spot. 15

15—Body narrower, shining, pale in color, the head slightly infuscate; prothorax testaceous, the elytra flavate, with a large common oval sutural spot of black, the centre of which is well behind the middle, extended along the suture to the scutellum by a narrow black vitta, the submarginal spot of black slightly behind the middle, the apex black, more widely so externally than suturally; under surface and legs pale, the met-episterna and abdomen piceous-black; head five-sixths as wide as the prothorax, with large and prominent eyes, the surface smooth, but becoming longitudinally and feebly rugulose laterally; antennæ slender, testaceous, more than half as long as the body; prothorax twice as wide as long to a trifle more, the sides broadly rounded, moderately reflexed, broadly so at base, the angles sharply defined; transverse rugulosity fine, not dense, the median stria fine but rather deep; elytra fully a third longer than wide, very feebly subdilated posteriorly, four-fifths wider than the prothorax, the striæ somewhat coarse and impressed, irregularly sub-punctate, with the intervals slightly convex. Length 3.4-4.0 mm.; width 1.35-1.6 mm. Southern California to Texas and Utah (southwestern,—Weidt). *guttula* Lec.

Body broader, shining, the head deep black, the labrum pale flavate; pronotum fusco-testaceous, gradually clearer laterally; elytra as in *guttula*, except that the sutural spot is relatively not so large and the apical fascia piceous and narrower; under surface and legs pale, the met-episterna and abdomen piceous-black, the metasternum blackish laterally; head nearly five-sixths as wide as the prothorax, with large and prominent eyes, the surface finely rugulose throughout, except at the middle of the vertex; antennæ very slender, more than half as long as the body, fuscous, the three basal joints testaceous; prothorax very short, slightly more than twice as wide as long, the arcuate sides more convergent at apex than in the preceding, becoming very feebly sinuate at the sharp basal angles; rugulosity rather fine but close-set and distinct; margins rather more widely reflexed than in *guttula*; elytra much broader, scarcely a fifth longer than wide, gradually dilated posteriorly, very nearly twice as wide as the prothorax; striæ finer and more feebly impressed, the intervals not quite flat. Length 4.2 mm.; width 2.15 mm. California (Lake Co.),—Fuchs. *pacifica* n. sp.

The species described above under the name *serpentina*, is allied closely to the Mexican *calliope* Bates, and was so identified by Schaeffer, but it appears to be narrower and more elongate than that species, the head piceo-rufous and perfectly smooth, and not black and very obsoletely punctulate and striate as it is in *calliope*, and the sides of the prothorax would appear to be somewhat more widely explanate; the size of *calliope* is about 0.5 mm. greater. An examination of the figure of *calliope*, given on the plate, would

seem to show that the prothorax is relatively narrower, the apical pale fascia of the elytra less dilated suturally and the distance separating this lobe from the posterior lobe of the anterior pale spots much less in *calliope* than in *serpentina*. *Appendiculata* Chd., is a species quite distinct from *analis* and on the average larger and broader, besides differing decisively in maculation. *Axillaris* Dej., according to the description, seems to be a valid species, but I have seen nothing to correspond. *Frigida* Chd., is placed as a synonym of *fuscata* in our lists, but the description and figure given by Chaudoir, show unmistakably that it is a synonym of *ornata*.

A partial review of the vittate species of *Lebia* was given by the writer some years ago (Mem. Col., IV, p. 191); the following is allied to *vittata* Fabr., but is quite distinct; a description of *vittata* is also given below for comparison:

***Lebia websteri* n. sp.**—Form rather stout, moderately convex, shining, the head and prothorax testaceous, the elytra black, with transverse pale apex, without sutural pale area behind the testaceous scutellum, the external pale margin confined to the narrow reflexed edge throughout the length; each elytron has also an oblique irregular vitta, extending from the base within the humerus to the apical pale area at inner third; this pale vitta involves outer half of the third interval from the middle to apex, all of the fourth interval from basal third to the apex, all of the fifth interval from base to apical third, and a small inner section of the sixth interval from basal seventh to third, all of these together producing a rather irregular single oblique vitta; under surface and legs throughout pale testaceous, the tarsi not at all darker; head large, about as wide as the prothorax, with large and prominent eyes; surface deeply strigose between the eyes, except at the middle, elsewhere nearly smooth; antennæ rather long, slender, black, the first three and one-third joints pale testaceous; prothorax fully twice as wide as long, the strongly rounded sides very convergent apically, somewhat widely and strongly reflexed, more broadly basally, the angles sharply defined; strigillation very fine and faint; median stria very fine, dilated and abbreviated near the apical margin; elytra a third longer than wide, slightly inflated posteriorly, twice as wide as the prothorax, the striae fine, smooth, evidently impressed, the intervals slightly convex. Length 5.8 mm.; width 2.5 mm. Indiana. Named in honor of Prof. F. M. Webster.

As will be observed on comparing the above with the following description, this species differs from *vittata* Fabr., in its larger size, completely pale legs and tarsi, very fine marginal pale stripe of the elytra and more irregular and composite median vitta, which is

smoothly limited at the sides in *vittata*, besides the larger head, more transverse prothorax and more impressed elytral striæ.

Lebia vittata Fabr.—Smaller than the preceding but of somewhat similar outline, shining, the head and prothorax testaceous, the elytra black, with pale apex, each with an oblique pale vitta extending from the humerus to the apical pale area near the suture, and with an external pale vitta from the humerus to the pale apex, broadest at the middle, where it occupies fully the two outer intervals; also with a very abbreviated common sutural vitta, extending a short distance behind the scutellum; under surface pale rufous, the legs black, more than basal half of the femora abruptly rufous; head nearly four-fifths as wide as the prothorax, with large and very prominent eyes, the surface almost smooth, feebly strigose toward the sides; antennæ more than half as long as the body, not very slender, black, the basal joint rufous, the second and third piceo-rufous; prothorax a little less than twice as wide as long, the rounded sides very converging apically and very moderately reflexed, more widely so thence to the base, the hind angles sharply defined; subtransverse strigillation feeble, the stria fine, deep, extending only to the fine and feeble anterior transverse impression; elytra scarcely a third longer than wide, gradually dilated behind, four-fifths wider than the prothorax, the striæ fine, smooth, the intervals not quite flat; dorsal punctures distinct. Length 5.0–5.2 mm.; width 2.2 mm. North Carolina (Southern Pines),—Manee. Two specimens.

Dianchomena Chd.

Disregarding modifications of the epilobes of the mentum and tooth of the emargination, which are of comparatively slight importance, I am of the opinion that this group of species should be accorded full generic value. The prothorax differs rather radically in structure and appearance from that of *Lebia*, being rounded at the sides, more evenly and gradually narrowed basally to the laterally much less developed basal angles, sometimes with the merest trace of these angles, as in *abdominalis*, and the side margins are narrowly and more feebly and equally reflexed throughout the length, giving to this important segment of the body a very characteristic habitus. The basal angle near the pedicel is sometimes remindful of *Lebia*, but it is very different in structure, there being no distinct basal enlargement of the finer reflexed margins. The elytra are diversified in coloration very much as in *Lebia*.

The species at present in my collection appear to be six in number as follows, *scapularis* of Dejean, included by Horn, being a true *Lebia*, as is also *miranda* Horn, in all probability:

Elytra wholly metallic green or blue in color.....2

Elytra black, each with one or two pale vittæ.....3

2—Body rather small in size, moderately convex, shining, the pronotum dull; head black, with dark green reflection, the prothorax flavo-rufous; elytra dark greenish-blue; under surface and legs testaceous, the meso- and metasterna, epipleura, tarsi and tibial tips black; head subequal in width to the prothorax, with moderate prominent eyes, the front nearly smooth, with some strigillation near the eyes and with scattered minute punctules; antennæ almost deep black, the first three and one-third joints testaceous, distinctly more than half as long as the body; prothorax a third wider than long, the sides subcircularly rounded and very moderately reflexed evenly to the basal lobe, excepting a very obtuse and feeble angulation near the latter; basal lobe much more than half the maximum width, somewhat punctured, the sulcus distinct, minutely angulate at the middle; surface convex, finely, feebly rugulose, the stria fine, extending to the apex; elytra between a third and fourth longer than wide, gradually moderately inflated behind, much more than twice as wide as the prothorax; striæ very fine, feebly punctulate, almost obliterated, the intervals flat, with some very minute sparse punctulation. Length 4.2–4.6 mm.; width 2.1 mm. Texas (Brownsville and elsewhere).....*abdominalis* Chd.

Body nearly as in the preceding in outline and coloration, but somewhat more elongate, with the elytra green; under surface and legs nearly similar; head only slightly though evidently narrower than the prothorax, with the eyes not quite so large and somewhat less prominent, the tempora more strongly rounded, the front nearly as in the preceding, the antennæ similar, except that the third joint is in great part blackish; prothorax shorter and broader, three-fifths wider than long, similarly rounded and evenly, moderately reflexed at the sides, but with the basal angulation more pronounced and at a greater distance from the basal lobe, which is but little more than half the maximum width; surface less convex, impunctate, the sulcus finer; stria similar; elytra nearly similar in outline but with even more obsolete striation and only barely more than twice as wide as the prothorax. Length 5.0 mm.; width 2.15 mm. Illinois (Cairo).....*convictor* n. sp.

3—Head and elytra black, the prothorax above and beneath testaceous, each elytron with a slightly oblique flavate vitta, extending from the middle of the base nearly to the apex at inner third; under surface and legs black, the abdomen rufous in posterior half or less, the tibiæ slightly pallid, dark at apex. Head shorter than wide, four-fifths as wide as the prothorax, sparsely and unevenly punctulate, the eyes prominent, moderately large; antennæ slender, black, the first three joints more or less pale, the third generally blackish distally; prothorax four-fifths wider than long to rather more, the sides strongly rounded and very narrowly, subevenly reflexed to the basal angles, which are sharp though very obtuse and at only a short distance from the basal lobe, the latter three-fifths the maximum width, the sulcus shallow; surface finely, sparsely rugulose

and punctulate, the stria very fine, not entire; elytra a third longer than wide, gradually feebly inflated posteriorly, distinctly less than twice as wide as the prothorax, the striae very fine, not impressed, feebly punctate, the intervals flat, with sparse and extremely minute punctulation; dorsal punctures small and feeble, at basal and apical fourth. Length 4.5-4.7 mm.; width 2.1-2.25 mm. California.

bilineata Mots.

Head and elytra black, shining, the prothorax above and beneath testaceous; elytra each with two flavate vittae; coxae and entire abdomen rufous, the meso- and metasterna and epipleura black.4

- 4—Head moderate, distinctly narrower than the prothorax, the eyes moderate, prominent. Surface nearly smooth, with minute sparse punctulation; antennae unusually long, much more than half as long as the body, black, the first three joints in great part testaceous; prothorax three-fifths (♂) to two-thirds (♀) wider than long, the sides rather strongly rounded and finely reflexed to the very obtuse angles, which are minutely prominent at tip; basal lobe punctulate, the sulcus shallow, not sharply defined; surface convex, shining, with fine sparse rugulosity, the median stria fine, not well defined and abbreviated; elytra two-fifths longer than wide, feebly dilated behind the middle, just twice as wide as the prothorax, the striae extremely fine and feeble, minutely punctulate, the flat intervals minutely, sparsely punctulate; each elytron with a flavate vitta from the middle of the base not quite to the apex near inner third, there slightly swollen, also with a submarginal vitta of equal width, extending to posterior fourth, the reflexed margin black; pale vittae equal in width and much narrower than the outer black vitta; legs black, the femora pale at base, the tibiae fusco-flavate except at tip. Length 5.2-5.7 mm.; width 2.25-2.4 mm. Kansas.*æmula* n. sp.

Head larger, barely visibly narrower than the prothorax; antennae not so long.5

- 5—The pale elytral vittae much narrower than the external black vitta as in the preceding; elytra more elongate; head finely and feebly, very minutely punctulate, with two larger, more widely separated, and two smaller, more anterior and more approximate, impressions, each pair on a transverse line through the eyes, the latter prominent though moderate in size; antennae not very slender, half as long as the body, colored as in *æmula*; prothorax one-half wider than long, the sides evenly, subcircularly rounded and narrowly reflexed to the obtuse but sharp basal angles, which are at a short distance from the basal lobe, the sulcus shallow and not sharply defined; surface convex, shining, with fine sparse rugulosity and minute sparse punctures, the stria fine, not entire; elytra slightly less than one-half longer than wide, very gradually and slightly broader posteriorly, fully twice as wide as the prothorax; vittae nearly as in the preceding, the submarginal a little shorter, the sculpture nearly similar, except that the fine striae are rather more distinct; legs black, the femora pale at base, the tibiae obscure rufous, black at tip. Length 5.3 mm.; width 2.2 mm. Iowa (Keokuk).

quadrivittata Dej.

The pale elytral vittæ much wider, about as wide as the external black vitta, the elytra much less elongate, relatively broader; head finely but strongly, less sparsely punctulate, the impressions between the eyes less definite; eyes a little larger, not quite so prominent; antennæ rather thicker, half as long as the body, shining black, the three basal joints more or less testaceous; prothorax a little more than one-half wider than long, widest more evidently before the middle, the sides subevenly rounded, finely but sharply reflexed to the basal angles, which are sharp and minutely subprominent at tip, the basal part thence to the basal lobe much more transverse than in the preceding, the surface forming the lobe more depressed and punctate, the sulcus not well defined; general surface features and fine median stria as in the preceding; elytra a fourth longer than wide, slightly inflated behind, much more than twice as wide as the prothorax, the pale vittæ much broader, equal in width to the black vittæ, the submedial pale vitta deflexed internally at its posterior end to the first stria, the very fine feeble striæ and minute interstitial punctures nearly as in the other species; legs black, the femora pale basally, the tibiæ pale rufo-flavate, black at tip. Length 5.75 mm.; width 2.5 mm. Colorado (Boulder Co.).

devincta n. sp.

The species usually called *bivittata* Fabr., I have entered above in the name given it by Dejean; *quadrivittata* is at least accurately defined by the author and is therefore definite, but this cannot be said of the Fabrician species, whatever it may prove to be.

Coptodera Dej.

The salient*external features of this genus are the stout and rather convex body, very large head, short transverse prothorax, elongate labrum, comparatively short antennæ, complete absence of the basal thoracic lobe of *Lebia*, indentation of the sixth elytral stria from the middle to apical sixth and the unusual position of the two dorsal punctures, the anterior being very near the base, adjoining the third stria, and the posterior only slightly behind the middle and at the second stria.

The considerable series in my collection from Indiana, Maryland and North Carolina agrees perfectly with LeConte's description of his *viridipennis* from Alabama, and, if really identical with *ærata* Dej., the latter name must be regarded as unhappily chosen; this however was due primarily to Knoch, who sent it to Dejean under the manuscript name *Lebia ærata*; the green color of the elytra is intense and vivid and the head and pronotum are deep greenish-black.

Axinopalpus Lec.*Axinopselaphus* G. & H.

In this genus the species are very small, with the hind thoracic angles acute and more or less prominent behind a small sinus, the base transverse and the elytra usually but not always ornamented with a flavate humeral spot, which is obliquely prolonged posteriorly. The eight species in my collection may be known very readily as follows:

- Elytra with pale humeral marking.....2
 Elytra wholly pale, without maculation.....6
 2—Humeral pale maculation very short, faint and nubilously defined.

Body very small, the surface polished, blackish-piceous, the head black; under surface and femora black, the tibiæ and tarsi paler; head somewhat wider than long, five-sixths as wide as the prothorax, smooth, with a few feeble rugulæ behind the eyes, which are well developed and prominent; palpi pale; antennæ long, nearly three-fifths as long as the body, longer than the elytra, fuscous, gradually paler basally; prothorax short, three-fifths wider than long, widest anteriorly, the oblique sides becoming sinuate posteriorly and very finely reflexed, the basal angles right, sharp and laterally prominent; surface smooth, the anterior and posterior transverse impressions deep, the connecting median stria fine but deep; elytra one-half longer than wide, nearly three-fourths wider than the prothorax, parallel, the outer angle at apex broadly rounded, the feeble truncature not sinuate; striæ fine, feebly impressed; dorsal punctures small and feeble. Length 2.3 mm.; width 1.0 mm. California (Napa Co.—Jountville). Taken by the writer.

illectus n. sp.

- Humeral pale maculation more extended posteriorly and sharply defined.....3

- 3—Antennæ shorter though very slender, about as long as the elytra, the individual joints much shorter. Surface highly polished; body black, the humeral pale mark extending through basal third at the sides and to the middle and inner third on the disk; under surface black, the legs and epipleura pale; head distinctly narrower than the prothorax, rounded, fully as long as wide, with notably small and but feebly prominent eyes; antennæ fusco-testaceous, gradually clearer basally; prothorax less abbreviated than in the preceding, though with nearly similar outline, one-half wider than long, the finely reflexed sides similarly more widely deplanate at the sharp and laterally prominent angles; impressions finer and feebler, the median stria deep; surface very smooth and polished; elytra two-fifths longer than wide, four-fifths wider than the prothorax, similar in outline, the striæ fine and very feebly impressed. Length 2.3–2.8 mm.; width 0.8–1.1 mm. California (Los Angeles to Humboldt).....*californicus* Mots.

- Antennæ much longer, with more elongate though not quite so narrow joints.....4
- 4—Elytra more elongate, fully two-fifths longer than wide and as long as the antennæ. Body elongate, polished, piceous-black, the humeral flavate marking extending at the sides to a little before the middle, and, on the disk, to posterior third, the inner side following the second stria rectilinearly for a long distance; head small, scarcely over two-thirds as wide as the prothorax, the eyes rather small but prominent; antennæ slender, fuscous, becoming pale in the four or five basal joints; prothorax relatively large, scarcely one-half wider than long, in outline nearly as in the two preceding but with the sharp basal angles slightly more than right; margins very finely reflexed, broadly deplanate at the angles; anterior impression extremely fine and feeble and the posterior obsolete medially, the median stria fine but deep, the surface very smooth; elytra slightly broader posteriorly, with broadly arcuate sides, two-thirds wider than the prothorax, the striae fine and very feebly impressed. Length 2.8 mm.; width 1.15 mm. Texas (Austin). A single example, taken by the writer.....*habilis* n. sp.
- Elytra in similar manner fully as long as the antennæ, the head and prothorax larger, the eyes very much more prominent. Upper surface almost deep black, the under surface piceo-rufous, the epipleura and legs bright flavate; head three-fourths as wide as the prothorax, with very prominent eyes, the anterior impressions parallel and very remotely separated; antennæ long and slender, flavo-rufous, gradually dusky distally, the fourth joint fully three times as long as wide; prothorax large and transverse, four-sevenths wider than long, widest near apical third or fourth, the sides strongly rounded, thence oblique and less arcuate posteriorly, becoming parallel for some distance before the right and sharp angles, extremely finely reflexed throughout; base broadly lobed in the middle, somewhat wider than the broad apical sinus, the apical angles broadly rounded; transverse impressions very feeble, the stria deep, the basal foveæ very small and feeble; elytra rather more broadly oblong than in *habilis*, with broader humeri, only feebly inflated posteriorly, the humeral and apical angles broadly rounded, nearly two-fifths longer than wide, about one-half wider than the prothorax, the sharply defined pale area occupying nearly basal half at the sides and outer half at base, the posterior prolongation extending to three-fifths and not quite as long as the humero-marginal part; striae fine and very feeble, more nearly obsolete than in *habilis*. Length 3.2 mm.; width 1.22 mm. Colorado (Boulder Co.),—Cockerell.....*coloradensis* n. sp.
- Elytra less elongate, only about a fourth longer than wide, shorter than the antennæ.....5
- 5—Head smaller, with well developed and very prominent eyes, piceous-black, polished; humeral flavate spot extending through basal third at the sides and to just behind the middle near inner third on the disk, the posterior arm narrower than in *habilis* and more oblique; under surface piceous-black, the legs and epipleura pale flavate;

head three-fourths as wide as the prothorax; antennæ three-fifths as long as the body, feebly incrassate distally, fuscous, the first five or six joints flavate; prothorax one-half wider than long, the sides strongly rounded anteriorly, rather deeply sinuate for a short distance before the basal angles, which are sharp and laterally prominent; margins very finely reflexed, the deplaniture at the angles more gradual and less well defined than in the preceding forms; transverse impressions obsolete, the median stria deep and rather coarse; elytra subparallel, with arcuate sides, two-thirds wider than the prothorax, the striae very fine and extremely feeble; dorsal punctures not clearly visible. Length 2.65–2.8 mm.; width 0.85–1.1 mm. Rhode Island. Four examples....*biplagiatus* Dej.

Head relatively larger but with decidedly smaller and less conspicuously prominent eyes, piceous-black and polished; humeral pale area extending a little behind basal third at the sides, the inner ramus long, longitudinal and extending through three-fifths; under surface as in the preceding, the meso- and metasterna, but not the parapleura, also pale as in *biplagiatus*; head nearly four-fifths as wide as the prothorax, as long as wide, smooth, with two feeble impressions at the epistomal suture; antennæ slender, two-thirds as long as the body, fuscous, the first six joints flavate; prothorax shorter, rather more than one-half wider than long, widest well before the middle, but with more evenly rounded sides than in *biplagiatus*, the basal sinus deep, the angles sharp and laterally somewhat prominent; margins and impressions nearly similar, the median stria finer; elytra parallel, with arcuate sides, three-fifths wider than the prothorax, the striae fine and very feebly impressed, the dorsal punctures extremely small and feeble. Length 2.7–2.9 mm.; width 1.0–1.2 mm. California (San Francisco to Los Angeles)...*demissus* n. sp.

6—Body very small in size, moderately shining, flavate in color, the under surface of the hind body sometimes more piceous; head infusate, narrow, elongate, with rather long neck, three-fourths as wide as the prothorax, the eyes small, very moderately convex; front smooth; antennæ flavate, three-fifths as long as the body; prothorax a third wider than long, widest anteriorly, with evenly rounded and very finely reflexed sides, converging posteriorly, rather deeply sinuate before the acute and laterally rather prominent angles; surface at the angles slightly deplanate, elsewhere convex, smooth, the anterior impression, medially, and the posterior sulcus both distinct, the stria deeply impressed; elytra two-fifths longer than wide, feebly inflated posteriorly, four-fifths wider than the prothorax, feebly convex, the striae shallow and broadly impressed, the dorsal punctures minute and feeble, scarcely discoverable. Length 2.65 mm.; width 1.0 mm. California (San Francisco and Marin Co.).....*fusciceps* Lec.

Body decidedly larger and with the lustre and coloration subsimilar; head larger, four-fifths as wide as the prothorax and not longer than wide, the neck shorter; eyes not so small and evidently more prominent; surface not so smooth, minutely, sparsely punctulate; antennæ nearly similar; prothorax larger, less abbreviated, a fourth

wider than long, the general outline nearly similar, except that the base is about as wide as the apex and not a little narrower as it is in *fusciceps*; anterior impression feeble, the impressed median stria longer; elytra longer, nearly one-half longer than wide, three-fourths wider than the prothorax, oblong, with arcuate sides, the striæ rather deeper and more sharply defined than in the preceding; outer angle at apex similarly broadly rounded, the apex arcuate-truncate; dorsal punctures minute, indistinct. Length 2.7-3.0 mm.; width 0.9-1.1 mm. Texas.....*nigriceps* Lec.

Californicus Mots., and *nigriceps* Lec., have been declared synonyms of *biplagiatus* and *fusciceps* respectively, but this is incorrect; they are both amply valid as species; in fact, there would appear to be little or no doubt connected with the validity of any of the species above described; they are well characterized among themselves.

Blechrus Mots.

Bomius Lec.

Although *Metabletus*, as represented in the European fauna, is probably distinct from *Blechrus*, this cannot be said so truly of *americanus*, now placed in that genus in our lists, and I think, with Zimmermann, that it should be ranged with the other American forms under the genus *Blechrus*; *Apristus*, however, by peculiarities of sculpture and habitus, should be regarded as valid, and not united with the others as recommended by Zimmermann. Our species of *Blechrus* are small, slender, black and polished, and have the surface nearly smooth; those in my collection are the following:

- Prothorax relatively narrower, but little more than half as wide as the elytra.....2
 Prothorax broader, transverse, very much more than half as wide as the elytra. *Metabletus* Horn.....7
 2—Head broader, not elongate, the eyes distinctly prominent.....3
 Head narrower, elongate, the eyes not prominent though somewhat convex.....4
 3—Surface shining, black throughout the body, legs and antennæ, the femora and coxæ picescent; head but just visibly narrower than the prothorax, smooth, the eyes at about their own length from the base, the tempora strongly converging; antennæ distinctly more than half as long as the body; prothorax larger than in any other of this section of the genus, not quite one-half wider than long, nearly three-fifths as wide as the elytra, widest anteriorly, the arcuate sides oblique behind, very finely reflexed, a little more so at the basal angles, which are minutely acute and subprominent; transverse impressions obsolete, the median line coarsely impressed;

elytra not quite one-half longer than wide, the sides barely at all arcuate, evenly and moderately diverging from the humeri; apex truncate, the external angle moderately rounded; striæ broadly, very feebly impressed and subobsolete. Length 2.65–3.3 mm.; width 1.0–1.2 mm. Utah (southwestern), Idaho (Cœur d'Alene), Wisconsin and Iowa to New York and Massachusetts. [*Dromius angustus* || Lec.]. *linearis* Lec.

Surface similarly colored and shining, smaller in size; head relatively larger, as wide as the prothorax, nearly smooth, with a small central fovea or impression; eyes at about their own length from the base; antennæ moderately slender, over half as long as the body; prothorax a third to two-fifths wider than long, four-sevenths as wide as the elytra, in outline nearly as in the preceding, the basal angles even more distinctly acute and prominent; impressions faint, the stria deeply impressed and biabbreviated; elytra shorter, two-fifths longer than wide, in general outline and sculpture nearly similar. Length 2.6–3.0 mm.; width 0.9–1.0 mm. Nevada (Reno) and California (Lake Tahoe and Humboldt Co.). *prominulus* n. sp.

4—Antennæ long and slender, much more than half as long as the body. California. 5

Antennæ shorter, half as long as the body, the individual joints much more abbreviated; size much smaller. Sonoran regions. 6

5—Body smaller and narrower than in *linearis*, rather depressed, shining, black, the legs piceous; head smooth and rhomboidal, just visibly narrower than the prothorax, the latter a third wider than long, widest anteriorly, the sides broadly arcuate, oblique behind, the angles minutely prominent; margins as in the preceding species; impressions obsolete or very feeble, the surface smooth as usual; median stria rather coarsely and deeply impressed, biabbreviated; elytra nearly one-half longer than wide, the sides very feebly arcuate, slightly diverging; surface depressed, the striæ broadly, feebly impressed but evident. Length 2.75–3.0 mm.; width 0.85–1.1 mm. California (Sta. Clara to Sonoma). Rather abundant.

nigrinus Mann.

A—Similar to *nigrinus* but somewhat larger and more convex, the head not so narrow, as wide as the prothorax, with the eyes distinctly larger and relatively somewhat less prominent; prothorax shorter, fully two-fifths wider than long; elytra wider and more convex, very smooth, the striæ subobsolete, barely glimpsible in part by oblique light. Length 3.4 mm.; width 1.15 mm. California (San Francisco). *fretus* n. subsp.

B—Similar to *nigrinus* and with the head notably narrow and the antennæ long and slender as in that and *fretus*, but with the prothorax shorter, nearly one-half wider than long; elytra as in *nigrinus* in outline, about one-half longer than wide, narrower and more elongate than in *fretus*, rather convex, smooth, the striæ obsolescent as in *fretus*. Length 3.25 mm.; width 1.05 mm. California (Port Harford, S. L. Obispo Co.). *obispinus* n. subsp.

Body still smaller and with evidently shorter elytra, shining, black, the legs piceous; head rhomboidal, barely narrower than the prothorax,

the eyes very slightly more prominent than in *nigrinus*, the front smooth; antennæ evidently shorter than in any of the three preceding forms, though longer than half the body, the individual joints much more abbreviated; prothorax as in *nigrinus* but a little shorter, the head, neck and prothorax all relatively wider than in that species; elytra a third longer than wide, three-fourths wider than the prothorax, in outline and striation almost as in *nigrinus*, the striæ obtusely impressed and similarly distinct. Length 3.0 mm.; width 0.95 mm. California (San Francisco).

curtipennis n. sp.

- 6—Form narrow, very moderately convex, polished black, the elytra, epipleura and legs piceous; head narrow and elongate-rhomboidal, fully as wide as the prothorax, smooth, the eyes rather well developed but not at all prominent; prothorax small, barely a third wider than long, the sides broadly arcuate, converging from well before the middle, becoming briefly sinuate at the basal angles, which are more than right though sharp and subprominent, barely at all reflexed; anterior impression scarcely evident and only at the middle, the posterior obsolete, the median stria deeply impressed, biabbreviated as usual; elytra two-fifths longer than wide and just visibly more than twice as wide as the prothorax, of the usual outline but without evident striation; dorsal punctures very minute, just before the middle and near apical third. Length 2.5 mm.; width 0.75 mm. Texas (Austin). Colorado River of California,—LeConte.....*lucidus* Lec.

Form still narrower and smaller than any other known species, feebly convex, shining, black, the epipleura and legs piceous; head not so elongate, barely longer than wide, rhomboidal, the eyes small, feebly convex; prothorax equal in width to the head, small, only slightly wider than long, the moderately oblique sides from near the apex less arcuate than usual, the hind angles sharply subprominent, transverse impressions very feeble, the anterior nearer the apex than usual, the median stria moderate; elytra almost one-half longer than wide and just visibly less than twice as wide as the prothorax, the sides slightly diverging from the humeri; striæ broadly and very feebly impressed though evident. Length 2.0 mm.; width 0.65 mm. Texas (Brownsville); also occurs in Louisiana.

pusio Lec.

- 7—Form somewhat broader, rather convex, shining, black, the legs piceous; head wider than long, sensibly narrower than the prothorax, the eyes well developed and notably prominent; front smooth; anterior impressions briefly lineiform, oblique; antennæ slender, a little more than half as long as the body; prothorax short and transverse, nearly three-fifths wider than long, widest and inflated well before the middle, the hind angles more than right but sharp and subprominent; impressions moderate, the anterior at a considerable distance from the apex, the stria moderate, impressed; base with a feeble median lobe; elytra two-fifths longer than wide, rather convex, subparallel, less than one-half wider than the prothorax, the striæ fine but rather sharp, slightly irregular,

feebly impressed though evident, the dorsal punctures nearly as in the preceding; apical truncation just visibly sinuate, rounded toward the suture. Length 2.6–3.0 mm.; width 0.9–2.2 mm. New Hampshire, Ontario, Lake Superior, Colorado, Arizona, Idaho and Washington State (Spokane). Abundant. *americanus* Dej.

There can be little or no doubt that *linearis* Lec., is a species different from *nigrinus*, with which it was united too hastily, as shown by ample series. I am quite unable to place the species described by Zimmermann as *Metabletus borealis*, from Lake Superior; it is said to be very similar to *americanus*, but with the prothorax transversely quadrate, only slightly narrowed behind and having broadly reflexed hind angles; these characters will not answer at all to *americanus*, for there the prothorax is rather strongly narrowed behind and with a very narrow deplaniture at the hind angles. The name *angustus* is only preoccupied apparently in *Dromius*, in which genus it was placed by LeConte, so that it would be available in *Blechnus*, but as *linearis*, by the same author, is equally suitable, I leave the synonymy as above given.

There is very little development or diversification of color or sculpture throughout this genus, so that an unusual degree of monotony prevails among the species. The name *Microlestes* Sch.-Göb., is used in place of *Blechnus* in the recent European catalogue, but I have no opportunity at present to confirm the correctness of the course indicated.

Apristus Chd.

The general habitus of the small elongate species composing this genus is very much as in the preceding, but the elytra are more deeply sculptured and the colors more metallic as a rule; the chief distinction, however, among the Lebiinae, resides in the small slender tarsal claws, which are devoid of all vestige of serrulation beneath. The sides of the thoracic base are more or less oblique and the mentum is denticulate. The anterior tarsi of the male are barely thicker than those of the female, but are always notably shorter. Our species are widely diffused over the entire country, as well as Mexico, and are rather numerous, especially near the Pacific coast; those now represented in the material so far accumulated are as follows:

- Sides of the prothorax briefly and feebly sinuate at the sharp and minutely subprominent basal angles; dorsal punctures of the elytra two in number.....2
- Sides deeply sinuate in basal fourth; dorsal punctures three.....11
- 2—Prothorax very short, fully three-fourths wider than long. Body black, rather shining but without distinct metallic lustre; under surface and legs black, the coxæ piceous; head well developed, four-fifths as wide as the prothorax, with notably broad neck, not longer than wide, the eyes rather large and prominent; surface rugulose or strongly micro-reticulate throughout, with a small central puncture and striole; antennæ black as usual, about half as long as the body; prothorax widest at apical third, where the sides are strongly rounded, oblique posteriorly; base equal in width to the neck, the lateral obliquity short but strong; apex broadly sinuate; margins extremely finely reflexed; surface feebly rugose, the impressions obtuse, shallow, the median stria deeply impressed; elytra between a third and fourth longer than wide, parallel, one-half wider than the prothorax, the apices slightly oblique; margins very finely reflexed; striæ fine, shallow, slightly uneven, not at all sulciform; intervals somewhat uneven, sparsely micro-punctulate and strongly reticulate though shining. Length 3.25 mm.; width 1.25 mm. California (Sonoma Co., Cloverdale). A single female.
cephalus n. sp.
- Prothorax less abbreviated.....3
- 3—Elytral striæ very fine, shallow and equal throughout the width, not in the least sulciform. Body rather more depressed than usual and shorter, black, somewhat shining, the elytra dark piceous; under surface and legs black; head scarcely as long as wide, five-sixths as wide as the prothorax, the eyes moderate and but slightly prominent; front smooth, rugulose antero-laterally, the anterior impressions long, striiform and parallel; antennæ moderate, less than half as long as the body; prothorax three-fifths wider than long, in outline and general structure nearly as in the preceding; surface smoother, the impressions more nearly obsolete; stria fine, impressed, entire; elytra oblong, parallel, a third longer than wide, a little less than one-half wider than the prothorax, shining and only feebly micro-sculptate, the intervals flat; dorsal punctures distinct, near two-fifths and three-fourths, not closely adjoining the third stria. Length 3.0 mm.; width 1.2 mm. California (Mt. Diablo). A single male example, taken by the writer.....*subdeletus* n. sp.
- Elytral striæ broadly sulciform at least toward the suture.....4
- 4—The sulciform striæ of the elytra obliterated laterally, rather less deep than usual toward the suture; body small in size.....5
- The striæ more or less conspicuous throughout the width.....6
- 5—Upper surface shining and rather brightly æneous throughout; under surface black, the legs piceous; head fully four-fifths as wide as the prothorax, as long as wide, with moderate but rather prominent eyes; front smooth, rugulose anteriorly, the anterior impressions short; antennæ black, half as long as the body; prothorax large, three-fifths wider than long, the sides finely but evidently reflexed, rather

broadly rounded anteriad, oblique posteriad, the hind angles somewhat blunt, thickened; surface smooth, except at apex and base, the impressions very feeble, the stria fine, impressed, biabbreviated; elytra short, parallel, a fourth longer than wide, two-fifths wider than the prothorax; apices slightly oblique, with very broad external angle; striae in about inner half shallowly broad and sulciform; dorsal punctures adjacent to the third stria, just before the middle and at apical fourth. Length 3.0 mm.; width 1.2 mm. California (San Diego). A single female example, taken by Mr. Dunn.....*laticollis* Lec.

Upper surface rather shining but barely at all metallic, the elytra not quite so deep black as the anterior parts; under surface and legs black, the coxae paler as usual; head only just visibly narrower than the prothorax, fully as long as wide, with rather large and prominent eyes, the surface smooth, feebly punctulate and subrugulose anteriorly, the impressions short; antennae slender, nearly half as long as the body; prothorax almost three-fifths wider than long, relatively not so large as in the preceding, though nearly similar in outline, the hind angles somewhat more than right but sharper and prominent; impressions obsolete, the surface punctulate near apex and base; stria fine, deeply impressed; apex very shallowly sinuate, subprominent toward the middle; elytra between a third and fourth longer than wide, parallel, with broadly arcuate sides, fully one-half wider than the prothorax; striae fine throughout, feebly impressed and much less than usually subsulciform internally; dorsal punctures fine, not quite adjoining the third stria behind basal third and at apical fourth. Length 2.85 mm.; width 1.1 mm. Nevada (Reno). A single example, taken by the writer.

nevadensis n. sp.

6—Sides of the prothorax moderately oblique behind.....7

Sides strongly oblique, the base relatively narrow.....10

7—Eyes notably prominent; surface shining, black, very obscure subaeneous in lustre; under surface and legs black; head rather large, barely visibly narrower than the prothorax, smooth, with some sparse and minute punctulation anteriorly, the anterior impressions short but deep; antennae slender, half as long as the body; prothorax less than usually expanded anteriorly, slightly less than one-half wider than long, widest behind apical third, the sides broadly rounded, oblique and becoming gradually sinuate behind, the angles right and sharp; margins very finely reflexed, the surface shining and nearly smooth, punctulate at apex and base, the impressions almost obsolete, the median stria deeply impressed; elytra oblong, parallel, with broadly and subevenly arcuate sides, scarcely a third longer than wide, three-fifths wider than the prothorax; striae broadly sulciform, finer and feebler laterally, the micro-reticulation strong; dorsal punctures distinct, barely before the middle and just visibly before apical fourth. Length 3.1 mm.; width 1.2 mm. Arizona (Tuçson),—J. F. Tucker.....*tuckeri* n. sp.

T. L. Casey, Mem. Col. IX, Feb. 1920.

Eyes only very moderately prominent, the prothorax more expanded anteriorly.....8

- 8—Head much narrower than the prothorax; elytra parallel, with distinctly and evenly arcuate sides. Rather shining, black, the elytra not quite black and obscurely æneous; under surface and legs black; head as wide as long, four-fifths as wide as the prothorax, the eyes moderate in size; surface rather dull, minutely, sparsely punctulate, the antennæ slender, somewhat more than half as long as the body; prothorax large, rather more than one-half wider than long, the sides broadly arcuate anteriorly, converging and subsinuate behind, finely but sharply reflexed, the angles right and very sharp; surface minutely punctulate and finely rugulose, the impressions evident but obtuse, the median stria deeply but not broadly impressed; elytra oblong, between a fourth and third longer than wide, barely one-half wider than the prothorax, the striae rather deep, sulciform, the dorsal punctures strong, adjacent to the third stria, well before the middle and near apical fourth. Length 3.25 mm.; width 1.2 mm. Pennsylvania. A single male.

subsulcatus Dej.

- A—General features nearly as in *subsulcatus* but smaller in size and rather narrower, the head a little more than four-fifths as wide as the prothorax and fully as long as wide; elytra similarly piceo-rufous, with æneous lustre, narrower, with the parallel sides less arcuate; antennæ distinctly more than half as long as the body. Length 3.0 mm.; width 1.15 mm. Texas (Austin). Two specimens.....

fuscipennis Mots.

Head relatively larger, only very little narrower than the prothorax...9

- 9—Elytra shorter, oblong-suboval, the parallel sides distinctly arcuate.

Color black, the elytra faintly piceo-rufous, with moderate æneous lustre; under surface and legs black; head somewhat wider than long, the eyes better developed and somewhat more prominent than in *subsulcatus*; surface punctulate anteriorly, the anterior impressions short; antennæ distinctly more than half as long as the body; prothorax less transverse than in *subsulcatus*, similar in general outline, but with the basal angles sharp and minutely prominent, the surface nearly similar; elytra narrower, a third longer than wide, two-thirds wider than the prothorax, the sulciform striae less deep than in *subsulcatus*, the dorsal punctures differently placed, smaller, the anterior at the middle, the posterior at apical fourth. Length 2.9 mm.; width 1.18 mm. North Carolina (Southern Pines),—Manee. A single male example.....

actuosus n. sp.

- Elytra much more elongate, the parallel sides less arcuate. Color deep black, with moderate æneous lustre, especially on the elytra, the ground color of which does not seem to be rufescent; under surface and legs black; head fully as long as wide, with large but only moderately prominent eyes, the surface convex, nearly smooth, with a few fine punctures anteriorly; antennæ half as long as the body; prothorax large, the sides finely but sharply reflexed, more broadly rounded than usual, converging and arcuate posteriorly, feebly sinuate for a short distance at the basal angles, which are

minutely prominent and sharply right; surface shining and with some fine loose subtransverse rugulæ, the impressions evident; median stria deeply and broadly impressed; elytra a third to almost one-half longer than wide, not quite one-half wider than the prothorax, the broadly sulciform striæ much more shallow than in the two preceding species; dorsal punctures slightly before the middle and behind apical third. Length 2.8–3.2 mm.; width 1.0–1.2 mm. New Mexico (Jemez Springs),—Woodgate. Three specimens.

thoracicus n. sp.

- 10—Color black, feebly æneous, the elytra piceo-æneous; under surface and legs black; surface shining; head fully as long as wide, five-sixths as wide as the prothorax, the eyes rather well developed, only moderately prominent; surface nearly smooth, with minute sparse punctulation; antennæ more than half as long as the body; prothorax one-half wider than long, with the sides subprominently rounded near apical two-fifths, strongly oblique, becoming slightly sinuate thence to the basal angles, which are sharp and minutely subprominent; surface with some fine sparse transverse rugulæ, finely, closely sculptured and opaculate basally and longitudinally finely rugulose at apex, the anterior impression obsolete; median stria fine, impressed, not entire; elytra a third longer than wide, parallel, with broadly arcuate sides, two-thirds wider than the prothorax, the sulciform striæ deep. Length 3.2 mm.; width 1.18 mm. Maryland (Piney Point), Mississippi (Vicksburg) and one example, differing only in having slightly shorter elytra, from Lake Superior (Bayfield).....*cordicollis* Lec.

Color black, obscurely æneous above, the femora basally and the trochanters picescent; head fully as long as wide, only a little though evidently narrower than the prothorax, the eyes well developed but not very prominent; front as in the preceding, the anterior lineiform impressions slightly longer; antennæ more than half as long as the body; prothorax nearly as in *cordicollis* but even more rapidly and widely inflated apically, the base three-fourths as wide as the apex, which is broadly sinuate; surface smoother and more polished, duller, rugulose and feebly impressed near apex and base, the stria fine but impressed; elytra rather elongate, more than a third longer than wide, with parallel and broadly arcuate sides, one-half wider than the prothorax; base more deeply sinuate medially than in the preceding, the sulciform striæ more shallow. Length 3.1–3.3 mm.; width 1.0–1.2 mm. Washington State. Four examples.....*pugetanus* n. sp.

Color black, feebly ænescent above, the elytra more brightly æneous; size smaller than in the two preceding; head relatively large, barely at all narrower than the prothorax, at least in the male, not quite as long as wide, the eyes moderately large and distinctly prominent; front nearly smooth, with some close strigilate rugulæ toward the sides; antennæ rather more than half as long as the body; prothorax short, three-fifths wider than long, widest at apical third, where the sides are strongly rounded, thence very oblique posteriorly, becoming almost straight and parallel near the angles, which are right and

sharply defined; surface finely and sparsely sculptured, more closely at apex and base, the impressions evident, the stria deeply impressed; elytra shorter, about a fourth longer than wide, oblong and somewhat depressed, with but feebly arcuate parallel sides, about one-half wider than the prothorax, the striae deeply sulciform internally, fine and feeble externally; dorsal punctures as usual. Length 2.7 mm.; width 1.1 mm. California (Humboldt Co. and Sta. Rosa).

Two examples.....*liratus* n. sp.

A—Almost similar to *liratus* but with the prothorax much narrower, only about a third wider than long; head rather longer than wide, about as wide as the prothorax, the eyes a little smaller and less prominent; surface of the anterior parts almost similar in the general feeble sculpture but still more shining. Length 2.65 mm.; width 1.05 mm. California (San Diego). A single male, taken by the writer.....*agitatus* n. subsp.

11—Body narrow, elongate and rather depressed, deep black and shining, without æneous lustre; head slightly elongate, almost as wide as the prothorax, with very moderate eyes, which are but slightly prominent, the surface smooth, with some sparse punctures anteriorly; antennæ slender, somewhat more than half as long as the body; prothorax short, three-fifths wider than long, widest near apical third, but with the inflated and extremely finely reflexed sides subcircularly rounded, becoming strongly convergent toward the abrupt constriction, the basal angles slightly less than right and very sharp; apex broadly and deeply sinuate, with sharp angles; surface finely, closely rugulose, strongly impressed at apex and base, the median stria fine and deep; elytra elongate, parallel, with but very feebly arcuate sides, fully one-half longer than wide, slightly more than one-half wider than the prothorax; striae broadly sulciform, the dividing intervals somewhat acute; dorsal punctures rather strong, the first at three-sevenths, the second a little behind the middle, the third before apical fourth. Length 3.35 mm.; width 1.18 mm. California (Sta. Rosa).....*constrictus* n. sp.

There is but very little diversification in anatomical characters suitable for taxonomic use in the species of this genus, which have to be determined therefore in large measure by general habitus, made up of coloration, form of the head, eyes and prothorax, depth of elytral striation and some other features; in many respects *constrictus* is widely distinct from any other species, and its isolation is confirmed by the three dorsal punctures of the elytra instead of the otherwise almost universal two. The species described by LeConte under the name *Dromius latens*, from the vicinity of the Mississippi River, I do not seem to have at present; it is said to resemble *subsulcatus*, but with the elytra less deeply striate, the striae in fact almost indistinct, and it is of a reddish-æneous tint,

nearly as in *fuscipennis*. This genus is very poorly represented by a single species, and perhaps a few subspecies, in the European fauna.

Dinodromius n. gen.

The numerous European species of *Dromius*, apportioned among a number of subgenera, are notably small, slender insects, the prothorax sometimes apparently longer than wide, and, on the ground of habitus at least, the comparatively large, broader American forms allied to *piceus*, ought to form a different genus, a name for which is suggested above. The bottom of the mental sinus has a rapidly declivous short coriaceous extension, the chitinous edge adjoining having at the middle an excessively short, transverse and deeply emarginate tooth, which is wholly invisible except under high amplification. The palpi are notably stout, the fourth joint rapidly pointed at tip. The ligula is large and greatly expanded, evenly convex and smooth. The prosternum is notably narrow and strongly convex between the coxæ, and the head is broadly rhomboidal, with long converging tempora.

The species described by LeConte under the name *Dromius atriceps*, seems to differ greatly from the others, because of its small size and slender outline, and it may be that this is a true *Dromius*; I have seen no example and therefore cannot allude to it in greater detail.

The species of *Dinodromius* at hand are the following:

Prothorax short and transverse. Piceous, shining, elongate and feebly convex, the head somewhat more dusky; under surface and legs pale, the abdomen a little darker; head not quite as long as wide, with well developed, prominent eyes, the rapidly converging, and feebly, evenly arcuate tempora about as long as the eyes; front smooth, with a few strong longitudinal plicæ at the sides, except behind the limits of the eyes; labrum transverse, broadly arcuate at tip; antennæ slender, pale, almost half as long as the body; prothorax fully three-fifths wider than long, widest before the middle but with the sides broadly rounded, feebly sinuate at base, broadly reflexed and diaphanous, the basal angles obtuse and rather blunt; base rounded at the sides, wider than the feebly sinuate apex; surface very smooth, with distant transverse rugulæ, the impressions obsolete, the median stria fine and feeble; elytra oblong, parallel, very feebly inflated behind, two-thirds longer than wide, nearly one-half wider than the prothorax, transversely truncate, with rounded external angle; striæ fine, feeble and some-

- what comminuted, the intervals flat. Length 6.0 mm.; width 2.4 mm. California (Lake Co.),—Fuchs. *quadricollis* Lec.
- Prothorax as long as wide or very nearly. 2
- 2—Body larger than in the preceding, moderately convex, shining, castaneous, piceous beneath, with the legs testaceous; head rather longer than wide, three-fourths as wide as the prothorax, the eyes rather well developed but much less prominent than in the preceding, the long converging tempora nearly straight; front as in the preceding but with the lateral plicæ more numerous; antennæ fuscorufous, clearer basally, distinctly less than half as long as the body; prothorax in general outline and broadly reflexed diaphanous side-margins, nearly as in the preceding, the transverse rugulæ rather closer and more numerous; median stria fine, biabbreviated; apex much narrower than the base, more deeply sinuate than in *quadricollis*; basal foveæ similar, smooth, at lateral fifth; elytra nearly as in *quadricollis* in outline but four-fifths wider than the prothorax, and with the fine and slightly uneven striæ rather deeply impressed, the intervals broadly convex, not perfectly flat as in the preceding; dorsal punctures not evident. Length 6.6–7.8 mm.; width 2.35–2.8 mm. Maryland and Lake Superior (Marquette and Bayfield). Eight examples. *piceus* Dej.
- Body smaller and narrower than in the preceding, castaneous, the under surface and legs paler, polished, the elytra more strongly microreticulate than in *piceus*; head four-fifths as wide as the prothorax, shorter, as wide as long, but otherwise similar, the eyes more prominent; antennæ testaceous, slender, a little less than half as long as the body; prothorax shorter, a fourth wider than long, otherwise nearly similar, except that the sides are more oblique posteriorly; margins broadly, subequally reflexed throughout and diaphanous; elytra similar in general outline but only three-fifths wider than the prothorax, the striæ differing in being broadly and feebly impressed and obtuse, the intervals very feebly convex, the dorsal punctures not observable and probably wanting in the genus. Length 6.0 mm.; width 2.1 mm. Mexico (Colonia García, Sierra Madre Mts. Chihuahua),—Townsend. **chihuahua* n. sp.

I am unable to understand on what ground *quadricollis* has been placed as a variety of *piceus*; it is altogether distinct in its shorter head, more prominent eyes, transverse and relatively much broader prothorax, feeble striæ, perfectly flat intervals, smaller size and many other characters. It is not advisable to give the name *quadricollis*, unless the prothorax approximates a square, which is not by any means the case in this species. I am unable to discover any clear trace of dorsal punctures on the elytra, which is another obvious distinguishing feature of this genus.

Pinacodera Schm.

This genus is distinguished from *Cymindis* primarily by the glabrous upper surface of the tarsi and well developed wings, and, in a subordinate but externally more striking sense, by the much less strongly sculptured pronotum and head. There are some characters recalling the preceding genus, *Dinodromius*, such as the general form of the prothorax, with widely reflexed translucent side margins, and the longitudinal plicæ at the sides of the front; in fact *Dinodromius piceus* Dej., was originally described as a *Cymindis*, which is closely related to *Pinacodera* and undifferentiated therefrom by Dejean. In this genus the elytra have however two very distinct dorsal punctures. The species are rather numerous, those in my collection being distinguishable as follows:

- Strial intervals of the elytra with nearly similar sculpture throughout the width.....2
- Strial intervals alternating in character of sculpture, having each a single line of fine punctures, or, a narrow median stripe, in which these very small punctures are broadly confused in arrangement; surface glabrous, the apical thoracic angles with a few short setæ.....8
- 2—Elytra each with a definite and very constant humeral rufous spot; sculpture very fine and feeble. Body not very broad, feebly convex, shining throughout, the elytra not duller, piceous, the under surface and legs pale testaceous; pronotum and elytra pale at the sides, the former broadly; head elongate, three-fourths as wide as the prothorax, with large and prominent eyes, the surface smooth, with a few long plicæ laterally; antennæ slender, pale, fully half as long as the body; prothorax a third wider than long, widest barely before the middle, with almost evenly rounded and very broadly reflexed sides, the apical and basal angles broadly and evenly rounded, pale at apex and base, as well as the sides, smooth, feebly punctulate at apex and base, more strongly on the reflexed sides; transverse impressions distinct; median stria impressed, gradually fine posteriorly and greatly biabbreviated; elytra three-sevenths longer than wide, one-half wider than the prothorax, oblong, the truncature feebly sinuate; striæ moderate and slightly impressed, minutely punctulate, the intervals not quite flat, each with an approximately single row of very fine and scarcely definite punctures; dorsal punctures distinct, near the third stria, near two-fifths and three-fourths. Length 8.8–9.2 mm.; width 3.2–3.6 mm. Rhode Island to Illinois. Sixteen examples.....*limbata* Dej.
- Elytra without a pale humeral area; surface similarly glabrous, except in *ampliata* and *ruficornis*.....3
- 3—Strial intervals of the elytra having each a single series of extremely minute punctures; basal thoracic angles subprominent at their tips.....4

- Strial intervals with strong punctures, forming more or less irregular single series; body deep black, polished, the thoracic angles obtuse, bluntly rounded at tip. Mexico.....6
- Strial intervals with moderate though very distinct punctures, confused in arrangement throughout the width of each; thoracic angles obtuse, bluntly rounded.....7
- 4—Elytra and the entire upper surface polished. Body rather small, piceous, diaphanously paler at the sides; under surface piceous, the legs testaceous; head nearly as in the preceding, the antennæ fuscous, clearer basally, slender, more than half as long as the body; prothorax as in the preceding but rather shorter, two-fifths wider than long, less rounded at the sides behind the middle and with the basal angles not broadly rounded but very obtuse, with the tips evident and barely even blunt, there being often a short and very faint sinus in front of them; median line broadly, deeply and evenly impressed, attaining the base and very nearly the apex; elytra oblong, nearly similar in outline but with more arcuate sides and more broadly rounded external angle at apex, two-thirds wider than the prothorax, the striæ rather deeply impressed, minutely but clearly, closely punctulate; intervals not quite flat, the punctules of the series widely spaced and extremely fine and feeble; dorsal punctures coarse, at one-third and three-fourths. Length 7.8 mm.: width 3.1 mm. Canada (Ontario), Pennsylvania and Rhode Island.....*fuscata* Dej.
- Elytra alutaceous or opaculate, the micro-reticulation distinct; remainder of the surface above and below polished; basal thoracic angles prominent, with very sharp tips.....5
- 5—Color pale rufo-testaceous, the elytra nearly black, nubilously reddish toward base, the abdomen black posteriorly; legs obscure rufous, the femora flavescent; head more than three-fourths as wide as the prothorax, elongate, with prominent eyes, the surface sparsely punctulate, uneven antero-laterally, the anterior superciliary puncture very coarse; antennæ fusco-testaceous, slightly longer than the head and prothorax, the latter three-sevenths wider than long, widest before the middle, with broadly rounded sides, becoming oblique behind and broadly, strongly reflexed, a little less broadly at apex; base broadly arcuate, abruptly less so at the sides; surface with some feeble transverse rugulosity, minutely, sparsely punctulate, more distinctly and less sparsely peripherally; base distinctly depressed; anterior impression almost obsolete; median line deeply impressed, greatly biabbreviated; elytra somewhat over one-half longer than wide, oblong, with arcuate and strongly reflexed, diaphanously rufous sides, three-fifths wider than the prothorax, the apical truncate oblique, in part sinuate, with broadly rounded external angle; striæ fine, even, shallow, minutely, strongly and closely punctulate; intervals flat or alternately feebly convex, each with a single series of extremely fine, feeble, widely separated punctures; two dorsal punctures small, at three-sevenths and three-

fourths. Length 10.3–10.8 mm.; width 3.9–4.0 mm. Arizona (Douglas, Cochise Co.),—Snow. [*Cymindis blanda* Csy.].

blanda Csy.

Color and lustre as in the preceding, except that the elytra are only slightly darker than the anterior parts and piceous-brown, smaller in size; head similar, the punctulation more minute, the lateral rugosity and plicæ distinct; antennæ rufo-fusces, not very slender and obviously less than half as long as the body; prothorax not quite so broad or transverse, the rounded sides broadly and equally reflexed throughout the length, less oblique posteriorly than in *blanda*, broadly arcuate; median part of the base more thickly margined; surface nearly similar, except that the anterior impression is deep medially; median groove greatly biabbreviated, the basal deplanate depression more punctate and in part longitudinally plicate; elytra as in the preceding in outline but two-thirds wider than the prothorax, the sides more arcuate posteriorly; apex similar, except that the external angles are much less broadly rounded; striæ fine and feebly impressed, closely punctulate, the intervals slightly convex, flatter behind, similarly very minutely punctulate in single loose series, the outer side of the seventh series finely carinulate; dorsal punctures almost similar though still smaller. Length 9.7 mm.; width 3.7 mm. Arizona (Tucson),—Tucker.....*subcarinata* n. sp.

6—Form more abbreviated than in the two preceding, intensely black and polished, the legs and tarsi deep black; head fully four-fifths as wide as the prothorax, with very prominent eyes, the surface feebly, sparsely subrugulose and sparsely, finely punctulate, with a few long plicæ at the sides; palpi piceous, pale at apex; antennæ dark brown, the first four joints blackish-piceous, more than half as long as the body; prothorax a third wider than long, widest near apical third, the sides oblique and nearly straight from the rounded anterior part to the base and widely, equally reflexed; base arcuate and beaded medially; impressions broad and very feeble, the base not deplanately depressed; surface nearly smooth, sparsely punctulate peripherally; median stria fine, almost entire; elytra inflated posteriorly, a third longer than wide, three-fifths wider than the prothorax, the striæ rather deeply impressed, not very fine and closely punctate; intervals convex, the punctures of the series strong and widely spaced. Length 9.7 mm.; width 3.5 mm. Mexico (Tres Marias, Morelos),—Wickham. [*Cymindis atrolucens* Csy.].....**atrolucens* Csy.

Form and coloration nearly as in the preceding but with smaller head and more abbreviated elytra, the legs black, with dark rufous tarsi; surface not glabrous as in the preceding, each puncture bearing a short erect hair; head smoother but with more plication laterally; eyes much less prominent; antennæ relatively not so long, though fully half as long as the body, dark rufous or brownish-rufous throughout, clearer at base; prothorax nearly similar but smoother, less punctate peripherally; elytra not so inflated posteriorly, subparallel, with broadly arcuate sides; striation and interstitial punc-

- tures almost similar, the intervals flatter; dorsal punctures similarly two in number at the third stria. Length 10.2-11.0 mm.; width 3.65-4.2 mm. Mexico (Guerrero),—Baron. **ruficornis* Bates
- 7—Body large and unusually broad, moderately convex, shining throughout, rufo-piceous, the pronotum paler at apex and base and broadly, diaphanously so at the sides, the elytra black throughout, the reflexed margin testaceous; under surface and legs pale rufous, the abdomen black at the sides and apex; dorsal punctures throughout bearing each a very short erect hair; head elongate, more than two-thirds as wide as the prothorax, the eyes only moderately prominent; surface with fine sparse punctures, smooth medially, with a few long plicæ antero-laterally; left mandible rather abruptly bent at the middle; antennæ dark brown, more rufous basally, a little longer than the head and prothorax, the latter large, two-fifths wider than long, widest slightly before the middle, the sides arcuate, somewhat more converging gradually behind, very broadly and equally reflexed throughout; impressions both feeble but rather evident, the median line fine, widely biabbreviated; surface with very fine sparse punctulation, becoming gradually coarser and closer peripherally; broadly arcuate median lobe of the base strongly beaded; elytra oblong, feebly inflated behind, nearly one-half longer than wide, two-thirds wider than the prothorax, the rather oblique truncature broadly sinuate medially, the bead rufous, the external angles very broadly rounded; striæ rather fine, minutely, closely punctulate; intervals feebly convex, the punctures rather fine and sparse but conspicuous, the dorsal punctures distinct, near two-fifths, adjoining, and at four-fifths, separated from, the third stria. Length 11.8 mm.; width 4.7 mm. Colorado. [*Cymindis planipennis* Csy. nec Lec.] *ampliata* n. sp.
- 8—Setigerous dorsal punctures of the elytra irregular, about three in number on the third interval, about two on the fifth, appearing among the other smaller punctures of the single series on the third, fifth and seventh intervals. Body rather depressed, shining, the elytra alutaceous, rufous in color, the elytra dark brown, with pale margins; femora more flavate, the abdominal tip somewhat dark; head elongate, distinctly narrower than the prothorax, having well developed and somewhat prominent eyes; surface smooth, the sides punctulate basally and having numerous plicæ toward the sides; antennæ rufous, nearly half as long as the body; prothorax less than a fifth wider than long, the broadly arcuate and widely, equally reflexed sides becoming oblique only well behind the middle, the angles obtuse but rather sharply defined, subprominent at tip; base obliquely rounded at the sides; apex sinuate, with very broadly rounded angles; impressions feeble, the stria very fine, subentire; surface smooth, finely punctulate peripherally; elytra almost one-half longer than wide, nearly four-fifths wider than the prothorax, the striæ very fine and extremely finely punctulate; intervals alternately flat with very minute confused punctures along the middle, and feebly convex with a single series of minute but more distinct and well spaced punctures, including some larger and

bearing short setæ. Length 10.0–11.5 mm.; width 3.85–4.4 mm. North Carolina (Southern Pines),—Manee. [*Cymindis complanata* Dej., and *russata* Newm.].....*platicollis* Say

Setigerous dorsal punctures definitely two in number, as usual in the genus.....9

9—Elytra short, not over a third longer than wide. Color piceous; sides of the pronotum widely, and of the elytra more narrowly, pale rufous; under surface rufo-piceous; legs bright flavo-rufous, the epipleura pale flavate; head moderate, scarcely more than two-thirds as wide as the prothorax, with somewhat prominent eyes; surface very smooth throughout, plicatulate antero-laterally; antennæ slender, rufous, three-sevenths as long as the body; prothorax a third wider than long, widest before the middle, the sides broadly rounded, widely and evenly reflexed, oblique and straighter in about basal half, the hind angles obtuse, with the tips rather well defined, though not sharp, and very slightly prominent; surface with some transverse rugulæ medially, smooth, feebly punctulate at the sides but less distinctly at apex and base, the anterior impression obtuse but visible; basal impression deep, transverse, interrupted at the middle; median stria fine, biabbreviated; elytra three-fourths wider than the prothorax, the external apical angles very broadly rounded; striæ rather deep, moderately fine, very minutely and closely but clearly punctulate; intervals not quite flat, alternating but slightly; fine punctures of the single series feeble, equal; dorsal punctures coarse, at the third stria, just before the middle and at apical fourth or fifth. Length 9.0 mm.; width 3.65 mm. Colorado. Levette collection.....*abbreviata* n. sp.

Elytra more elongate, subparallel, barely at all wider posteriorly....10

10—Surface moderately convex, polished, the elytra feebly alutaceous, blackish-piceous, the elytra black, the reflexed margins of pronotum and elytra diaphanously pale; under surface black, piceous anteriorly; legs and epipleura dark rufous, the femora more flavate; head elongate, nearly three-fourths as wide as the prothorax, with large and rather prominent eyes; surface very smooth, with some punctulation and very few plicæ antero-laterally; antennæ dark rufous, fully two-fifths as long as the body; prothorax transverse, fully a third wider than long, widest a little before the middle, with broadly and subevenly arcuate, broadly, equally reflexed sides, gradually a little more converging basally, the hind angles obtuse, with the tips bluntly subprominent; base broadly, feebly lobed, obliquely feebly arcuate laterally; apex sinuate, with broadly rounded angles which bear a small cluster of setæ; basal impression large, continued anteriorly, sparsely punctulate, narrowly interrupted at the middle; impressions subobsolete; median stria fine, subentire; surface nearly smooth, punctulate peripherally; elytra one-half longer than wide, three-fourths wider than the prothorax, with very broadly rounded external angles at apex; striæ fine, closely micro-punctulate; intervals not quite flat; line of confused minute punctures of the wider intervals narrow, occupying less than median third; dorsal punctures at two and four fifths. Length

10.8 mm.; width 3.85 mm. North Carolina (Southern Pines).—
 Manee.....*obscura* n. sp.
 Surface less convex, polished throughout; form more abbreviated, dark
 rufous, the translucent pronotal sides a little paler; elytra black,
 with the reflexed margins rufous; under surface and legs paler,
 rufous, the abdomen gradually darker posteriorly; head barely
 longer than wide, three-fourths as wide as the prothorax, smooth,
 plicatulate laterally throughout the length, the eyes very prominent;
 antennæ obscure rufous, slender, two-fifths as long as the body;
 prothorax transverse, two-fifths wider than long, widest slightly
 before the middle, the sides rather strongly, subevenly arcuate
 and broadly, evenly reflexed, the basal angles very obtusely sub-
 prominent at tip; base with broad feeble median lobe, slightly
 oblique and arcuate at the sides; apex sinuate, with broadly rounded
 angles, bearing each a few setæ; surface smooth though with some
 feeble transverse rugulæ; anterior impression feebly evident at the
 middle; basal impression interrupted at the middle; median stria
 fine, subentire; reflexed margins sparsely, the base and apex less
 distinctly, sparsely, punctulate; elytra oblong, parallel, scarcely
 one-half longer than wide, three-fifths wider than the prothorax;
 acute basal margin sinuate medially and very broadly rounded
 laterally as usual; striæ fine, very minutely punctulate; intervals
 not quite flat, the punctuation nearly as in the preceding, all the
 punctures feebler however and barely observable; dorsal punctures
 strong, on the third stria, at two and four fifths. Length 9.3 mm.;
 width 3.5 mm. Florida. A single example from an unrecorded
 locality.....*atripennis* n. sp.

The species described by LeConte as *punctigera*, from near
 Yuma, Arizona, is allied to *blanda* and *subcarinata*, but, according
 to the statements of Horn, differs from either in having the im-
 pressed median line of the pronotum continuous from base to apex.
Atrolucens I thought at one time might be one of the varietal forms
 of *atrata* Chev., but on reading Chevrolat's description more care-
 fully, it would appear to be specifically different, *atrata* being 11 mm.
 in length and having rufous tarsi.

In the case of *ampliata*, described above, I too hastily assumed
 it to be identical with *planipennis* of LeConte, but the description
 of that author, although indicating a species about as large in size
 and therefore not invalidating my remarks regarding *brevipennis*
 Zimm., seems to show that *Cymindis planipennis* is a different
 species from *Pinacodera ampliata*. The elytra in the former are
 said to be subopaque, darker in color posteriorly and with im-
 punctate striæ, and the pronotum deeply impressed at base; it is
 from New Mexico, and, as the differences between *Cymindis* and

Pinacodera were well known at that time, it is probably a true *Cymindis* as described. In *ampliata* the upper surface of the tarsi is glabrous and canaliculate along the middle, this depression not being discoverable in the other species; the sculpture and hairs of the striae intervals also render it quite isolated in the genus.

The species *fuscicollis* and *laevigata* of Motschulsky, the latter at least being from Mobile, I have not seen, and can therefore form no estimate of their systematic position; they are said to be identical with *limbata* by Horn, but this is altogether improbable, *limbata* being a northern species and peculiarly marked. I have also been unable to examine any representatives of *semisulcata* and *sulcipennis* of Horn, from Lower California. *Platicollis* is very peculiar in the greater number of dorsal setigerous punctures of the elytra and their extension to other intervals than the third; as Dejean is careful to mention three dorsal punctures, and his description accords otherwise, there is barely a doubt that the *complanata* of that author is the same species; the synonymy of *russata* is, however, taken from Horn and may or may not be correct.

Cymindis Latr.

This genus is closely allied to *Pinacodera* but, besides differing in the hairy upper surface of the tarsi, the form of body is more slender as a rule, the sculpture deeper, coarser and more conspicuous and the pubescence more abundant and coarser, giving to the species a different and characteristic habitus. Several of the special features noted under the preceding genus can also be observed here, for example, the small cluster of setæ at the apical angles of the prothorax and the irregular setigerous dorsal punctures of the elytra—very rare in *Pinacodera* but noticeable in *platicollis*. The revision of the genus given by the writer a few years ago (Mem. Col., IV, p. 177) is to be modified by the removal of *atrolucens*, *blanda* and *planipennis* Csý. nec Lec. (*Pinacodera ampliata* Csý.), to form part of the genus *Pinacodera*, and the addition of the three following:

* *Cymindis agitata* n. sp.—Moderately convex and ventricose, polished throughout, piceous-black, the elytra black, with the reflexed margin pale, the pronotum also diaphanously pale at the sides; under surface rufo-piceous, the abdomen black at the sides and apex—a form of coloration generally visible in *Pinacodera*, the legs rufous; head four-fifths

as wide as the prothorax, with numerous coarse deep punctures, smoother antero-medially, the antero-lateral plicæ distinct; eyes moderate, prominent; antennæ piceous, rufous basally, nearly half as long as the body; prothorax not quite a third wider than long, widest near apical third, the sides rounded, oblique posteriorly, the hind angles minutely prominent, not very broadly but strongly reflexed throughout; base slightly oblique and arcuate at the sides, as wide as the apex to slightly narrower, the apex broadly sinuate, with rounded angles; punctures moderate, deep, sparse, especially centrad, the fine impressed stria greatly bi-abbreviated; elytra about two-fifths longer than wide, subparallel, with broadly arcuate sides, one-half wider than the prothorax; striæ moderately coarse, deep, closely punctulate; intervals flat, each with a single rather uneven series of well spaced, moderate punctures, which are a little coarser than those of the striæ. Length 10.0-11.3 mm.; width 3.5-3.9 mm. Mexico (Colonia Garcia, Chihuahua),—Townsend. Three examples.

A comparison of the series of three specimens with four of the species which I identified as *uniseriata* Bates, shows that *agitata* is much larger in size, with relatively broader head and prothorax and less coarse and somewhat shallower elytral striæ; the prothorax is larger and rather more transverse. The dimensions of *uniseriata* Bates (Csy.) are 8.2-9.6 by 2.9-3.2 mm. The length given by Bates is 9 mm.

Cymindis directa n. sp.—Oblong, moderately convex, shining throughout and with short sparse coarse erect pale hairs, pale rufous, the elytra piceous, with the reflexed margins rufous, and each with a pale basal spot, involving intervals five to seven in basal fourth; under surface rufous, the entire hind body and legs flavate; head large, four-fifths as wide as the prothorax, with prominent eyes, having moderately coarse deep and well separated punctures, broadly almost wanting anteriorly, the antero-lateral plicæ few and feeble; antennæ slender, testaceous, more than half as long as the body; prothorax large, transverse, almost one-half wider than long, the sides broadly and moderately reflexed, parallel and feebly arcuate in about anterior half, rapidly oblique, becoming sinuate basally to the angles, which are right, with acute prominent tip; base broadly arcuate, very nearly as wide as the broadly sinuate apex having broadly rounded angles; surface more convex medially, coarsely, deeply, moderately closely punctate; elytra parallel, with virtually straight sides, one-half longer than wide, only a fourth wider than the prothorax, the tips arcuate, with broadly rounded external angle; striæ somewhat coarse, grooved, closely and strongly punctate; intervals flat, with confused and moderate punctures, much smaller than those of the striæ. Length 7.4 mm.; width 2.65 mm. Colorado (Akron),—Shantz.

This is an isolated species that could only be compared with *bipartita*, but differing in its larger, less basally narrowed prothorax,

though similarly having a series of about four long erect lateral setæ, in its more parallel elytra, with straight and not arcuate sides and a definite pale basal spot, and not gradually pale throughout in about basal fourth as in *bipartita*, and in its coarser striæ, with more close-set punctures; the humeral angles are much more rapidly rounded and the apices more evenly arcuate.

Cymindis continens n. sp.—Rather stout, subcuneate, moderately convex, shining, the elytra subopaque, black, the pronotal sides not paler; elytra narrowly rufescent at the sides and each with a large and well defined red humeral spot, with arcuate inner margin and extending from the middle of the base to the external margin at about two-fifths; under surface black, the hind body medially and the legs rufous; pubescence stiff, erect and pale; head large, slightly elongate, only very little narrower than the prothorax, with prominent eyes; surface coarsely, deeply and closely punctate, smooth antero-medially; labrum, mandibles and palpi rufescent; antennæ long, slender, fusco-rufous, more than half as long as the body; prothorax large, as long as wide, the sides subparallel and broadly arcuate, becoming rather rapidly sinuate basally, narrowly but abruptly reflexed, the angles prominent, rather sharp and much more widely and very strongly reflexed; base feebly arcuate laterally, slightly narrower than the apex, which is feebly sinuate, with moderately rounded angles; surface coarsely, very deeply and rather closely punctate throughout, the median line broadly impressed, very fine at the bottom, greatly biabbreviated; elytra nearly one-half longer than wide, two-thirds to three-fourths wider than the prothorax, moderately inflated behind, the apices rounded, oblique, more strongly rounded internally; striæ deep, very closely punctate, the intervals very slightly convex, with the punctures confused, moderately close, deep and about as large as those of the striæ. Length 10.5–11.4 mm.; width 3.9–4.2 mm. Colorado (locality unrecorded in the Levette collection). Two female examples.

Allied to the eastern *venator* and *americana* of Dejean, but shorter and relatively broader in build, the elytral interstitial punctures less close-set than in the former and the body larger and much broader than in *americana*, the head and prothorax larger, the elytra broader and with flatter intervals.

Since my last revision was published I have received three examples under the name *Cymindis elegans* Lec., from Löding and Manee—two from Mobile and one from Southern Pines, North Carolina. The stria intervals have each a regular series of punctures, which are much smaller than those of the striæ. The specimens from Mobile represent however a subspecies. The language of LeConte in describing *elegans* is: "Elytra brunneo-marginata,

margine ad humerum indistincte dilatato." This satisfies the form from North Carolina very well, where the humeral red spot extends only to between the fourth and fifth striæ. The variety from Mobile may be characterized as follows:

Cymindis elegans ssp. *mobilensis* nov.—Similar in form, size and coloration to *elegans* Lec., except that the base of the elytra is rufous from side to side; pale side margins of the prothorax not quite so wide; outer side of the sixth stria interval toward base more definitely carinulate; erect pubescence of the upper surface similarly sparse but notably longer, especially on the elytra. Length 9.8–10.5 mm.; width 3.3–3.7 mm. Alabama (Mobile).

The elytra in *mobilensis* are narrower and more elongate-oval than in *elegans*.

Lecalida n. gen.

In this genus, which is allied to *Calleida* in many characters, the general form, coloration and habitus of the body much more closely resembles *Platynus* than *Calleida*. There is no trace of metallic coloration, and the basally narrowed prothorax, with broadly reflexed side margins, is quite unlike anything observable in the latter genus. The mentum tooth is long and well developed, the maxillary palpi slender and of normal structure, the last joint of the labial broadly securiform, especially in the male. The anterior tarsi of the male have the first three joints biserially squamulose beneath, the lobes of the fourth joint finely spongy; the middle tarsi are simply hairy beneath, the first joint canaliculate except apically. On the dorsal surface the tarsal joints are coarsely canaliculate along the median line. The claws are well developed and are closely fimbriate beneath. The type of the genus is the following:

Lecalida pimalis n. sp.—Form elongate, moderately convex, shining, glabrous, the elytra micro-reticulate but almost as shining as the anterior parts, which are pale rufous, the elytra piceous, with rufous reflexed margins; under surface and legs rufous, the abdomen in great part more obscure; head fully three-fourths as wide as the prothorax, with very prominent eyes; surface smooth and impunctate, with a few feeble rugulæ subbasally and two or three long plicæ antero-laterally; mandibles short, thick, circularly arcuate externally; labrum arcuato-truncate, flat, one-half wider than long; antennæ slender, dark red-brown, two-fifths as long as the body; prothorax a fifth (♀) to sixth (♂) wider than long, widest before the middle, the sides circularly rounded, becoming broadly sinuate and parallel basally, the angles about right, sharp; margins broadly, strongly and equally reflexed; base barely as wide as the apex,

which is very feebly sinuate, with broadly rounded angles; basal foveæ distinct and shallowly prolonged; transverse impressions subobsolete; surface with well spaced and transverse rugulæ but in great part not evidently punctulate, feebly so peripherally; median line fine, broadly impressed, not attaining the base; elytra notably long, three-fourths longer than wide, feebly inflated behind, but little less than twice as wide as the prothorax, the apices rectilinearly truncate, with flat beading, the sides apically rapidly, arcuately converging; striæ fine, shallow, very minutely and closely but clearly punctulate; intervals distinctly convex (σ^7), or not quite flat (φ), and with extremely minute, sparsely scattered punctules; two dorsal punctures distinct, impressed, the anterior adjoining the third stria at two-fifths, the posterior not close to the stria and at apical fifth to sixth. Length 10.8–12.5 mm.; width 3.7–4.5 mm. Arizona (Tuçson),—Tucker. Seven specimens.

The last ventral segment is broadly arcuato-truncate at tip in both sexes, but there is only one setigerous puncture at each side in the male, two in the female. The following seems to be another allied species from the same locality:

Lecalida nigrītula n. sp.—Form and general characters nearly as in the preceding, but darker in color, the anterior parts piceous, the pronotum broadly and diaphanously pale at the sides; elytra black, with obscurely red reflexed margins; under surface piceous, the legs rufous; surface polished, the micro-reticulation of the elytra very fine and feeble; head a little larger, similarly elongate, nearly four-fifths as wide as the prothorax, almost as in the preceding species throughout, except that the eyes, though even larger, are notably less prominent; prothorax larger, more transverse, between a fourth and third wider than long, subsimilar in general features and with broadly, strongly reflexed margins, but with the sides less arcuate, very much less converging though similarly sinuate basally, the base much broader, wider than the apex; surface nearly similar; elytra still longer, four-fifths longer than wide, barely visibly swollen behind, only three-fourths wider than the prothorax, the apices similar; striæ not so fine, the close-set punctulation much more distinct; intervals broadly convex, flat posteriorly, minutely, sparsely punctulate, the impressed dorsal punctures almost similarly placed, the posterior axial on the interval and between apical fifth and sixth. Length 12.0 mm.; width 4.3 mm. Arizona (Tuçson),—Tucker. A single female example.

The fringe of the maxillary lobe is longer and denser in *pimalis* than in *nigrītula*, the apex of the lobe less abruptly and less obliquely hooked and the last joint of the flattened outer lobe is a little longer. The last antennal joint in *pimalis* much more notably exceeds the tenth joint in length than in *nigrītula*. In the latter the elytra are more nearly parallel than in *pimalis*.

The species described by Horn as *Calleida platynoides*, from Visalia, California, also belongs to this genus, but differs very much from either of the two preceding in the position of the posterior dorsal puncture of the elytra, which is said to be at apical third. The lateral thoracic margins are said to be "rather wide and slightly reflexed," which is not suggestive of the broadly and strongly reflexed margins of the two here described. It is further probable, from the language used and comparisons made, that *platynoides* is not so elongate as these species, having more the outline of *Anchomenus bicoloratus* G. & H. It is also highly probable that the *Calleida platynoides*, announced by Bates as occurring in northern Sonora, is one of the present two species and not the true Californian *platynoides*. The sides of the metasternum have some sparsely scattered punctures, extremely minute in *pimalis*, fine but more evident in *nigritula*.

Zacotus Lec.

In this remarkably isolated genus the body is slender and very convex, glabrous, shining, with basally constricted prothorax, thick antennæ and evenly rounded elytral tips, without trace of sinus. A small series of *matthewsi*, from Clackamas Co., Oregon, and Moscow, Idaho, seems to indicate that the female is somewhat more slender than the male, where the three basal joints of the anterior tarsi are well dilated. The following species, from southern Oregon, is decidedly more slender than *matthewsi*:

Zacotus angustus n. sp.—Very elongate, narrow and convex, moderately shining, with violet lustre, the under surface and legs deep shining black; head four-fifths as wide as the prothorax, with rather prominent eyes; surface very coarsely rugose, broadly, longitudinally biimpressed from apex nearly to the posterior line of the eyes; epistoma large, truncate, the suture distinct; mandibles small, hooked at tip; maxillary palpi stout, the last joint much longer and broader than the third, widest and truncate at apex; antennæ fuscous, thick, submoniliform, extending to about basal third of the prothorax, the joints after the third equal in length, two-thirds longer than wide and swollen at their apices, the last joint fusiform, pointed at tip; prothorax a fourth longer than wide, the sides broadly, subevenly arcuate and finely reflexed, the basal constriction abrupt, thence parallel to the obtuse angles; base evenly arcuate, narrower than the truncate apex having rounded angles; surface with strong and well spaced, transverse rugulæ; anterior transverse impression wanting, the posterior feeble, the median stria deep and impressed, greatly biabbreviated, the foveæ wanting; scutellum

extremely short and broad, confined entirely to the basal peduncle, not entering the elytra, the latter two and a third times as long as wide, a fourth or fifth wider than the prothorax, the sides parallel and almost evenly arcuate throughout, only a little more so at base; apex obtusely and evenly rounded; margins very finely reflexed; flanks with about five impressed submarginal punctures; striae rather fine, somewhat abruptly incised, not punctate; intervals flat, unevenly creased, without dorsal puncture; subscutellar puncture distinct, as far from base as suture and at the anterior end of the second stria, the short feeble and slightly oblique scutellar stria forming a subdetached basal part of the first stria and widely removed from the subscutellar puncture; side margin ending at the humeri, the base slightly depressed, not margined; anterior male tarsi moderately dilated, spongiose beneath; inner tibial tooth beyond the middle strong, bearing a long spiniform seta similar to the one at apex. Length (σ^7) 14.0 mm.; width 4.2 mm. Oregon (Josephine Co.),—Nunenmacher.

Differs from *matthewsi* in its more slender form, violet and not cupreous-red color, longer cephalic impressions, shorter third palpal joint, more abruptly incised and less impressed elytral striae and many other features.

Chlænus Bon.

A considerable number of nondescript species have accumulated in my collection during recent years, which it seems worth while to make known at the present time as follows:

Chlænus umbritarsis n. sp.—Body of large size, nearly as in *erythropus* but stouter, black, feebly shining, the elytra olivaceous-black and opaque; under surface rather shining, deep black, the legs dark rufous, with piceous-black tarsi; head four-sevenths as wide as the prothorax, with prominent eyes, the surface coarsely punctate basally, except on the neck, and with feebler ruguliform punctures laterally; median part impunctate to the apex; impressions obsolete; palpi rufous, long, the third joint a third longer than the fourth; antennae long, slender, fuscotestaceous, each joint with a fine blackish carina; prothorax but little wider than long, widest at the middle, where the sides are rather rounded, thence converging and feebly arcuate to the apex, less converging and feebly sinuate posteriad, the angles obtuse and blunt at tip; base transversely sinuate medially, a third wider than the sinuato-truncate apex; margins rather narrowly reflexed throughout; surface flattened medially, coarsely punctate, more closely toward base, the stria greatly biabbreviated and very fine; foveae longitudinally impressed; elytra oblong, nearly one-half longer than wide, three-fourths wider than the prothorax, the parallel, very feebly arcuate sides rapidly rounding at base; subapical sinus long and very distinct; striae fine, finely, not closely punctate; intervals flat, finely, closely punctate; scutellar stria very long; under surface punctured throughout, very finely, rather sparsely and unevenly on the abdomen. Length (φ) 22.3 mm.; width 9.3 mm. Louisiana.

Allied to *fuscicornis* Dej., but with relatively smaller prothorax, less reflexed at the sides, especially toward base, and with the foveæ well outside of lateral fourth and not very near lateral fourth as in that species; it also differs in its rather longer elytra and less infusate antennæ; from *erythropus* it differs in its much broader form of body, blackish tarsi, relatively shorter third palpal joint and much more distinct subapical sinus of the elytra.

Chlænium oblongipennis n. sp.—Body large, broad and only slightly convex, rather dull, the head shining, the elytra opaculate; under surface and legs nearly as in the preceding, but with the tarsi fusco-rufous; upper surface black, with faint purplish bloom, the head bright purplish-blue, nearly three-fifths as wide as the prothorax, with rather large prominent eyes; surface coarsely punctured subbasally and near the eyes, the anterior impressions short, broad and evident; antennæ slender, fusco-testaceous, the carina of each joint distinct; prothorax a fifth wider than long, much smaller than in *fuscicornis* but almost similar in outline and in the basally more reflexed side margins; surface somewhat concave medially, the punctures moderate and well separated, gradually becoming dense basally, the stria short, very fine; foveæ rather short, impressed and slightly outside of lateral fourth; elytra oblong, one-half longer than wide, fully two-thirds wider than the prothorax, the sides rapidly rounding at base, the subapical sinus long and very feeble; striae rather fine, feebly impressed, finely, not closely punctate; intervals not quite flat, minutely and very closely punctate; anterior male tarsi with the first three joints widely dilated; under surface punctured nearly as in *erythropus* and *fuscicornis*. Length (♂) 21.5 mm.; width 9.0 mm. Florida (Lake Worth),—Kinzel.

This species is more closely related to *fuscicornis* than to *erythropus*, but the relatively small prothorax is, in proportion to the body, almost as in *erythropus* and relatively much smaller and narrower than in *fuscicornis*; the pronotal punctures are much smaller than in *erythropus* and are even feebler than in *fuscicornis*, the bright purplish-blue head forms a rather striking character.

Chlænium regestus n. sp.—Rather stout and convex, somewhat shining, with opaque elytra, wholly bright sericeous green in color above, black beneath, the abdomen rufous at tip, the legs pale flavate, with rufous femora; head three-fifths as wide as the prothorax, with prominent, well developed eyes, the surface with some distinct punctures laterally, the anterior impressions short, broad and shallow; third palpal joint evidently longer than the fourth; antennæ slender, flavo-testaceous, extending somewhat behind the middle of the body; prothorax slightly more than a fourth wider than long, widest somewhat before the middle, but with very evenly arcuate sides to the subbasal sinus, thence parallel to the broadly rounded angles; base feebly bisinuate, wider than the

feebly sinuate apex; anterior transverse impression evident, the posterior obsolete, the short deep stria well impressed; punctures rather strong, close toward apex and more gradually so toward base, also rather close along the median line and toward the sides, elsewhere sparse; margins moderately reflexed; foveæ short, longitudinal, deeply impressed, remote from the base and near outer fifth; scutellum with sinuate sides and acute tip; elytra one-half longer than wide, nearly four-fifths wider than the prothorax, very faintly inflated posteriorly, the sides very rapidly rounded at base; apex rounded, with feeble sinus; striæ not much impressed but strongly punctate, the punctures very gradually smaller behind, traceable nearly to the apex; intervals nearly flat, very finely, rather closely punctate and briefly fulvo-pubescent; scutellar stria long and strongly punctate; under surface punctured throughout; tarsi infumate distally. Length (♀) 15.3 mm.; width 6.65 mm. Mississippi (Vicksburg).

Comparable only with *prasinus* Dej., but differing in its more abbreviated form, shorter antennæ, less transverse and latero-basally more sinuate prothorax, and more closely, much more finely punctate surface of the elytra, which also has finer, shorter and denser pubescence.

The species allied to *leucoscelis* have been greatly confused, but there seems to be but little need for the recorded uncertainties; *leucoscelis* was described from Mexico by Chevrolat, and a series in my collection taken at Tucson, Arizona, agrees perfectly with his description and also with that of *monachus* Lec. I regard this therefore as typical *leucoscelis*, with synonym *monachus*; it is moderate in size, indigo-blue in color, with slightly transverse prothorax, irregularly punctate, as usual in the group, and rather coarse impressed striæ, which are strongly punctate, the punctures obsolete behind about the middle. The species described by Kirby as *cordicollis* is strikingly distinct when observed in juxtaposed series; it is much larger, with broader elytra, having less impressed striæ, which are subequally punctured; it inhabits a climatically very different region in the north and east of the country. *San-antonialis* Csy., resembles *leucoscelis*, having similar indigo coloration and coarse, deeply impressed striæ, but the general form of the body is more abbreviated and the prothorax is shorter and more transverse, and *gilensis* Csy., is smaller, much narrower and more convex, with less impressed striæ and much finer and shorter pubescence. I believe these four are truly species, and I have to add here two more as follows:

Chlænienus sonomæ n. sp.—Deep indigo-blue, the head generally green between the eyes; form rather stout, very moderately convex, dull in lustre, less dull anteriorly and throughout the black under surface, the legs pale rufous; head four-fifths as wide as the prothorax, with moderate, very prominent eyes; surface impunctate but somewhat creased, the anterior impressions shallow but evident; mandibles and labrum rufous; third palpal joint a little longer than the fourth, both much narrower than the second; antennæ slender, brown, the first three joints testaceous; prothorax only slightly wider than long, the rounded sides distinctly sinuate behind and parallel for some distance before the angles, which are right and sharp; base transverse, as wide as the apex; stria deep, broadly impressed; anterior impression feeble, with very few feeble punctures, these traceable feebly along the stria toward base, more visible but sparse basally, obsolete at the opaque sides; foveæ shallow, feebly punctate, traceable to the middle; scutellum black; elytra oblong, very feebly inflated posteriorly, the sides nearly straight, very rapidly rounded at the humeri, three-fifths longer than wide, almost twice as wide as the prothorax; apex rapidly rounded, the sinus shallow but distinct; striæ rather fine, not coarsely impressed, the punctures strong basally, very gradually fine though visible to the apex; intervals nearly flat, the fine punctures moderately close, simple, the hairs rather coarse; anterior male tarsi moderately dilated, the second joint exactly quadrate. Length (♂ ♀) 13.0–15.0 mm.; width 4.9–5.9 mm. California (north of San Francisco). Ten examples.

Differs from *leucoscelis* in its slightly larger size, broader form and larger head, very sharp basal thoracic angles, these being blunt at tip in *leucoscelis*, and in the finer, less impressed and more equally punctate elytral striæ.

Chlænienus recticollis n. sp.—General characters as in others of the *leucoscelis* group; body narrower and more convex than in the preceding or *leucoscelis*, similar in the rather dull lustre, the upper surface not deep blue but green; legs rufous; head nearly similar but with much larger prominent eyes; surface impunctate, the anterior impressions nearly obsolete; third and fourth palpal joints equal in length; antennæ nearly similar; prothorax longer, about as long as wide, more parallel, the sides evenly but less strongly arcuate, becoming more gradually sinuate behind and parallel for some distance before the angles, which are right, with blunt tips; surface sculptured nearly as in the preceding, the foveæ shorter and feeble, the scattered basal punctures bearing much coarser and paler hairs; elytra parallel, broadly rounded at tip, three-fifths longer than wide, almost twice as wide as the prothorax; humeri rapidly rounded, less oblique at base than in *sonomæ*; striæ not much impressed, distinct and rather strongly punctate, the punctures gradually a little smaller posteriorly though traceable easily to the tip; intervals finely, not very closely punctate and with notably coarse pale hairs; subapical sinus almost obsolete; apical half of the last ventral pale, broadly angulate at tip in the male. Length (♂) 13.0 mm.; width 5.25 mm. California (the locality unknown).

Narrower and rather more convex than in the preceding, the elytra parallel and not inflated behind, the latero-basal thoracic sinus shallower and the hind angles bluntly rounded at tip; the color also is green in great part and not indigo-blue. The larger eyes constitute a striking differential feature. The dimensions of *leucoscelis*, taken from ten specimens, are 12.8–13.5 by 4.8–5.7 mm.

The following species belongs near *vafer* Lec., but is more elongate:

Chlænienius pertinax n. sp.—Form elongate, moderately convex, very dull in lustre throughout above, excepting the polished and sculpture-less head, which is dark green, the pronotum distinct, the elytra more obscure, olivaceous-green; under surface more shining, black, distinctly and rather closely punctate throughout, the legs pale rufous; head rather small, with very prominent eyes, four-sevenths as wide as the prothorax; anterior impressions obsolete; third palpal joint a little longer than the fourth; antennæ slender, brown, paler basally; prothorax but just visibly wider than long, widest at the middle, the sides broadly arcuate, becoming feebly sinuate at base, unusually finely reflexed, the angles more than right but very sharp; base slightly oblique at the sides, much wider than the apex; surface rather finely, not closely and subevenly punctate throughout, each puncture bearing a stout lustrous hair; transverse impressions wholly obsolete; median line deep, not impressed, biabbreviated; foveæ small, linear, feebly impressed; elytra two-thirds longer than wide, four-sevenths wider than the prothorax, the sides not very abruptly rounded at base, the subapical sinus feeble; margins very finely reflexed, rufescent; striæ fine but deep, finely punctate; intervals not quite flat, very finely, feebly and not densely punctate, the hairs small, fulvous; anterior male tarsi moderately dilated, the third joint barely visibly narrower than long. Length (♂) 11.7 mm.; width 4.8 mm. Florida (New Augustine).

Differs from *vafer*, found thus far only in Texas, in its narrower form, much less transverse prothorax, the sides of which are parallel for a short distance before the angles, and not converging to their tips as in *vafer*, and in the finer, less close-set punctures of the elytral surface; in *vafer* the third joint of the anterior male tarsi is relatively smaller, narrower and more elongate.

Chlænienius jacinto n. sp.—Elongate, but less so than in *tricolor*, the head and pronotum shining and bright cupreo-æneous, the elytra dull and purplish-indigo in color; under surface more shining, black, punctate, the abdomen very minutely; legs rufous; head elongate, barely more than half as wide as the prothorax, convex and nearly smooth, the anterior impressions small and punctiform; third and fourth palpal joints equal in length; antennæ slender, pale brown, clearer testaceous basally; prothorax between a third and fourth wider than long, parallel, the finely reflexed sides very evenly arcuate from apex to the basal

angles, which are obtuse though very sharply defined; base transverse, arcuate at each side, two-fifths wider than the distinctly sinuate apex; surface with moderate but deep, well separated punctures, gradually close toward base, the transverse impressions obsolete, the stria fine and short; foveæ deep, impressed, acute at the bottom, distant from the base and near outer fourth; elytra three-fifths longer than wide, two-fifths wider than the prothorax, parallel, with the arcuate sides only gradually more rounded basally, the subapical sinus rather short and distinct; striæ moderately fine, deeply incised, rather distantly and distinctly punctured basally, gradually impunctate posteriorly; intervals almost flat, minutely, not very densely punctulate, the hairs rather fine, gray; anterior male tarsi well dilated basally. Length (σ^7 φ) 10.5–12.0 mm.; width 4.6–4.7 mm. California (southern) and Arizona. Six examples.

Allied to *tricolor* Dej., but shorter in build, the head more elongate and with less prominent eyes; it differs principally, however, in the structure of the anterior male tarsi, the basal joint in *tricolor* being longer than wide, the third narrow and distinctly elongate, while in *jacinto* the first three joints are more broadly dilated, the first very nearly as wide as long, the third subquadrate.

The following two species may be placed in the group typified by *pennsylvanicus* and *brevilabris*:

***Chlænius sedulus* n. sp.**—Narrow and elongate, moderately convex, the head and pronotum shining æneous-green, the elytra rather dull, olivaceous-green; under surface rather shining, distinctly punctate throughout, black, the legs rufous; head four-sevenths as wide as the prothorax, with prominent eyes, the surface minutely, feebly sculptured and creased, impunctate, the anterior impressions small, punctiform; palpi slender, pale, the third joint subequal to the fourth; antennæ slender, black, the first three joints testaceous; prothorax a fourth wider than long, widest near the middle, the sides arcuate, more converging anteriorly, straight and feebly oblique posteriorly to the slightly more than right angles having scarcely blunt apices; fine reflexed margins rufous, still finer and black at apex; base slightly oblique at each side, much wider than the feebly sinuate apex; transverse impressions obsolete; stria fine, short, within a rather wide impression; foveæ short, fine, deep, linear, lying within a broad depression and distant from the base; punctures rather coarse, deep and close-set, somewhat less close subcentrally, except near the stria; elytra two-thirds longer than wide, two-fifths wider than the prothorax, the sides rather gradually rounded at base and evenly so to the thoracic angles, gradually rounded behind, the sinus rather short and distinct; striæ rather fine, feebly incised, finely punctured, smooth posteriorly; intervals flat, finely, not densely punctulate, the hairs moderate; anterior male tarsi moderately dilated, the first joint slightly oblique, as long as wide, the second slightly asymmetric and a little wider than long, the third subquadrate. Length (σ^7) 10.8 mm.; width 4.3 mm. Texas (Amarillo),—H. L. Shantz.

This species may be allied to *flaccidus* Horn, but is evidently distinct, as there is no trace of a sinus before the thoracic angles, this being specially stated as distinct in *flaccidus*; it is more elongate and slender than *pennsylvanicus*, where the second joint of the anterior male tarsi is quadrate and exactly as wide as long, the third slightly elongate; in *pennsylvanicus*, also, there is a distinct sinus before the thoracic angles, and the elytral striæ are distinctly impressed.

Chlænium blanditus n. sp.—Body slightly smaller and more abbreviated than in *pennsylvanicus*, bright green throughout above and rather shining, the elytra not distinctly opaculate; under surface black, punctate, the legs testaceous; head nearly as in *pennsylvanicus* but shorter and a little broader, the antennæ subsimilar; prothorax a fourth wider than long, the sides parallel and evenly arcuate throughout, becoming just visibly sinuate near the basal angles, which are slightly more than right and narrowly blunt at tip; median line fine, lying within a broad and feeble depression, the impressions obsolete, the foveæ short, linear, deeply impressed; surface strongly punctate, closely toward base, rather loosely elsewhere; margins finely rufescent; base feebly bisinuate, a little wider than the apex; elytra barely more than one-half longer than wide, not one-half wider than the prothorax, in outline nearly as in *pennsylvanicus*, the striæ similar but almost impunctate, the intervals flatter, with strong and asperate close-set punctures, the hairs a little coarser, brighter fulvous; anterior male tarsi well dilated, the second joint wider than long, the third about as wide as long. Length (♂ ♀) 9.7–10.0 mm.; width 4.0–4.4 mm. Utah (Vineyard),—Tom Spalding. Three examples.

Allied to *pennsylvanicus* but with shorter form of body and much brighter green color above, also with broader anterior male tarsi, the second joint in *pennsylvanicus* being exactly as long as wide, quadrate, the third distinctly longer than wide; the prothorax is more transverse and widest at the middle, and not behind the middle as it is in *pennsylvanicus*; the elytral striæ have much finer punctures, sometimes almost invisible, and the interstitial punctures are still stronger, rather closer and more asperate. In *brevilabris* the anterior male tarsi are as in *pennsylvanicus*, the prothorax more nearly as in *blanditus*, and the interstitial punctures are finer and sparser than in either of these species; *brevilabris* is a little larger and broader, with relatively larger prothorax.

The following is appreciably distinct from *tomentosus*, but may be regarded as subordinate for the present; the body is much longer and narrower and the coloration is different:

Chlænium tomentosus ssp. *lacustrinus* nov.—Body narrow and elongate-oval, black above, with barely a trace of metallic lustre at any part; maxillary palpi as in *tomentosus*, stout, the third joint a little longer than the fourth, which is broadly truncate at tip; prothorax not so transverse, a fourth wider than long, the punctures similar in character but not so coarse and more close-set; elytra almost similar but relatively narrower and more elongate, the vestiture shorter, not so dense and less conspicuous; anterior male tarsi nearly similar. Length (♂) 12.8 mm.; width 5.0 mm. Lake Superior (Bayfield),—Wickham.

In *tomentosus* the upper surface of the body, which is more broadly oblong-oval, is of a well known pale though dullish coppery tinge, which is virtually altogether wanting in the narrower and more elongate *lacustrinus*.

Chlænium punctipennis n. sp.—Body nearly as in *purpuricollis* but notably broader, oblong-oval, rather convex, strongly shining throughout and deep black, without any sort of metallic lustre, except a feeble purplish tint toward the sides of the pronotum; legs and male tarsi deep black; head notably small, much less than half as wide as the prothorax, with rather prominent eyes, the surface smooth, with a few strong punctures toward the sides; maxillary palpi with the last joint elongate-oval, truncate; antennæ piceous-black, with rufous basal joint, nearly half as long as the body; prothorax a third wider than long, the sides feebly arcuate; converging almost from base to apex, finely reflexed, the basal angles right but rather blunt at tip; base transverse, nearly two-thirds wider than the deeply sinuate apex; surface with coarse punctures, close-set basally, along the median line and foveæ, sparser postero-laterad, elsewhere unevenly very remote; foveæ broadly impressed, not sharply linear, the median stria very fine; elytra oblong, rounded in about posterior third, parallel, with straight sides, exactly equal in width to the prothorax and nearly one-half longer than wide, the subapical sinus feeble; striæ fine, not deep but sharply defined, not punctate; intervals with rather coarse, close-set punctures, bearing short blackish hairs; scutellar stria not well defined; anterior male tarsi only moderately dilated. Length (♂) 9.8 mm.; width 4.1 mm. Washington State (Wildur),—Wade.

Allied to *purpuricollis* Rand., but much broader in form, without general metallic violaceous tint on the upper surface and with much coarser interstitial punctures of the elytra; the second anterior male tarsal joint is less transverse than in *purpuricollis*, and the under surface of the body is more coarsely punctate.

Anomoglossus Chd.

The following species is somewhat allied to *gravis* Csy., but has the body more abbreviated and more anteriorly narrowed:

Anomoglossus semotus n. sp.—Stout in form, bright green and shining, the elytra opaque and purplish-black, with a narrow marginal bluish line; under surface shining, black, coarsely punctate, the abdomen picescent, with pale apical margin and with less coarse though strong, irregularly distributed punctures; legs pale testaceous, slender; head three-fifths as wide as the prothorax, the eyes well developed but only very moderately convex, the mandibles notably long, obscure rufous, hooked at tip; surface sparsely punctate, smooth antero-medially, the anterior impressions small and punctiform; palpi long and slender, the third joint much longer than the fourth; antennæ slender, flavo-testaceous; prothorax a fifth or sixth wider than long, widest behind the middle, the sides thence feebly converging and slightly arcuate to the feebly sinuate apex and just visibly converging, nearly straight and a little more reflexed basally, the obtuse basal angles rounded at tip; base oblique at each side, a third wider than the apex; surface coarsely, closely punctate, the punctures basally not quite so coarse but denser; median stria distinct; foveæ linear and deep but broadly impressed, at outer fifth, distant from the base; elytra broad, oblong, one-half longer than wide, three-fifths wider than the prothorax, obtusely rounded at tip, with feeble sinus, the sides very gradually rounding at base to the thoracic angles; striæ not very coarse but deeply incised, with moderate punctures, very minute posteriad; intervals nearly flat, finely, not very closely punctate, the hairs pale, rather stiff. Length (♀) 13.5 mm.; width 5.7 mm. Florida (Lake Worth),—Kinzel.

Differs from *gravis* in the characters stated, also in the less deeply sinuate labrum, less convex eyes, smaller prothorax, shorter and relatively broader elytra, more slender femora and in other characters.